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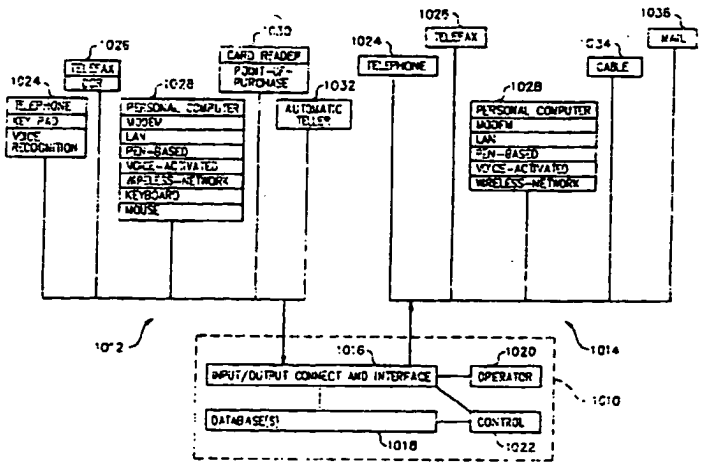

(57) Abstract

An interactive computer system (1010) provides electronic agents to represent the interests and needs of users of the system. The agents include information, stored in memory (1018), regarding the expressed interests, purchase histories, and demographic characteristics of the user. In one case, an agent will scan the database (1018) to select products of interest to the user and will compile and transmit to the user a catalogue of products, individualized to the user's interest. In another case, an agent will search for coupons, sales, discounts and the like which relate to products that are of interest to the user and automatically transmit the coupons, information and the like to the user. In another case, each of several polls has its own agent, screening incoming calls to identify callers that fit a predetermined demographic profile in order to achieve a statistically significant polling result.

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INTERACTIVE COMPUTER SYSTEM WITH SELF-PUBLISHING CATALOGUE, ADVERTISER NOTIFICATION, COUPON PROCESSING AND INBOUND POLLING

The present invention relates to an interactive computer system for matching customers or respondents with sellers or pollsters, and in particular to a system which provides publication of customer-customized catalogues or other product information, transmission and processing of customer-customized coupons, automatic renewal/modification notification to advertisers and/or statistical screening of inbound respondent characteristics for pollsters.

BACKGROUND OF THE INVENTION

The purchase and sale of goods and services and the collection of information requires communication between the parties involved. Traditionally, those desiring to sell goods or services, those desiring to hire employees and those desiring to gather statistical information, publish advertising directed toward these ends. The advertising may or may not reach the targeted audience, and often reach many members of the public who are not likely to have an interest in the information. Those who are seeking particular goods or services, employment or who wish to respond to polling requests are typically exposed to a great amount of irrelevant information and must review a large amount of information in order to identify the items of interest. For example, a seller who places an advertisement in a newspaper reaches a readership much larger than those who are interested in the subject of the ad. The impact of the advertisement on a potential buyer is diluted because the buyer must review many irrelevant advertisements for every advertisement of interest. This effect of diluting the impact of advertising and of burdening the consumer with irrelevant information arises

largely because the communication medium is wholly or largely passive. The communication medium does little or nothing to avoid mis-directed or irrelevant advertising. Thus both the advertiser and the recipient of the advertisement lack any facility within such passive advertising media to represent their respective interests.

Accordingly, it would be useful to provide a system for providing an active medium of communication which makes it possible to supply an automatic correspondence between the interests of the parties involved: the advertiser, the recipient of the advertisement and the advertising medium.

SUMMARY OF THE INVENTION

The present invention involves an interactive computing system for facilitating sales of goods and services and for gathering information, which provides a facility for representing the interests of the users of the system so as to automatically direct information to recipients who are likely to be interested in the information. In one embodiment, the interactive computer system generates one or more database entries and associated procedures, referred to herein as "agents" to represent the interests of the users of the system as well as the interests of the system. Each agent includes a portion of memory for storing information, in a predetermined fashion, relating to the likely interests, communications preferences, shipping and billing preferences, etc. of a user. Each agent also includes a communication facility for conveying information to users of the system and one or more predefined procedures for identifying and selecting information which fits the stored interest profile for that agent, so that the information can be transmitted to the user. The system provides for activation of agent at predetermined times or after predetermined events.

In one embodiment, a database stores information about each customer of a company, which includes information about the likely interest of the customer, such as past product purchases, demographic information, customer inquiries and the

like. At certain times (such as when new products are added to the company's line, or as prices change, sales or other promotions are announced, upon request by the customer, when the customer places an order, or at periodic intervals), the customer's agent prepares a "catalogue" of company products which is preferably individualized i.e. which is limited to, emphasizes or is weighted toward the items which are of likely interest to the customer. Thus, the customer does not bear the burden of reviewing large amounts of advertising for items which are of little interest, since the customer's interests have been represented by his electronic agent, who has produced an individualized catalogue. The catalogue can be sent by any of a number of communication facilities, including by phone, fax, modem, mail, or video preferably using a medium that has been tailored to the preferences or characteristics of the user, in reliance on information stored using the user's agent.

In addition, the seller can establish procedures for packaging/shipping a product using information about the buyer, obtained from the buyer's agent. For example, if the agent indicates that the buyer has access to telephone services, a product which is purchased can be packaged with automated telephone information, to, e.g., offer the buyer the opportunity to use his telephone to automatically perform product registration, obtain installation/ use instructions, obtain further product information, contract for extended warranty/maintenance services. If the agent indicates that the buyer has access to video service, the buyer can be offered the opportunity to receive video information or advertising and, if the video is interactive, to prefer product registration, etc. If the agent indicates the buyer prefers to communicate using a personal computer (PC), personal digital assistant (PDA), fax, or other communications means, the product and associated offers can be packaged accordingly. If the buyer wishes to place an order for delivery to a third party, e.g. as a gift, the buyer can be offered the opportunity to record a voice or video message ("virtual gift card"). Instructions for accessing the voice

or video message can be shipped with the product, or delivered to the third party in other ways (e.g. via telephone, fax, cable etc.) or the message can be delivered directly, automatically (e.g. by telephone, using an automatic dialing system).

In another embodiment, an agent is created to represent the interests of the advertiser and/or the system. For example, in the context of a classified ad system, such as that described in U.S. Patent application serial number 07/819,484 for Computer Based Classified System and Method, filed January 10, 1992 by James E. Lalonde and T.R. Dettmann, attorney docket number ECCO-1-6164 and the Continuation-in-part application, serial number 07/945,748 filed December 23, 1992, attorney docket number ECCO-1-6429, both of which are incorporated herein by reference, when a person places a classified ad, an agent is created which stores at information e.g. relating to the expiration/renewal date of the ad and the preferred means of communicating with the advertiser. When the expiration/renewal date approaches, the advertiser is notified and offered the opportunity to renew or modify the ad. Preferably, the agent will provide the notification automatically, using a communications medium which is preferred by or otherwise tailored to the advertiser. The agent can be configured to include information or offers which are individualized for this advertiser, such as discounts, or advertising options (placement, size, color, etc.).

In another embodiment, the agent can be configured to search for and offer or transmit coupons to users of the system. The agent performs this search using the stored information regarding the user's interests/ characteristics, so that the coupons are likely to be of interest to the user. In this way the user need not review large numbers of irrelevant coupons, since that function has already been performed by the agent.

In another embodiment, the agent can be configured to screen the users of the system according to criteria established by an agent. This aspect can be used, for example, in public-opinion or other polling system.

Typically, a polling system which is attempting to contact a representative sample of a population is necessarily an outbound system (i.e. with the pollster initiating the calls to pre-screened individuals). Although an inbound system (i.e. in which respondents volunteer to provide information by calling the pollster) would, in may ways, be simpler and less expensive, it is difficult or impossible, using traditional methods, to contact a statistically representative sample using an inbound system. According to this embodiment of the invention, the pollster establishes an agent which stores information regarding the type of caller needed to achieve statistical reliability. The agent can be configured to screen inbound callers by comparing characteristics of the caller to the characteristics which are desired for statistical reliability. The inbound calls which fit the statistical profile can the be handled either automatically, or by transferring the call to a human pollster.

By providing a system in which communication between buyers/ respondents and sellers/ pollsters is not passive, but provides automated agents for representing the interests of the parties, sellers or advertisers can more precisely target likely customers and buyers can receive information without being exposed to large amounts of irrelevant advertising or other information.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic block diagram of an interactive computer system coupled to input and output devices;

Fig. 2 is a schematic block diagram of an interactive computer system, according to one embodiment of the present invention;

Fig. 3 is a flow diagram depicting a generalized scheme for responding to user input in an interactive computer system, according to one embodiment of the present invention;

Fig. 4 is a flow chart showing the handling of an incoming call, according to one embodiment of the present invention;

Fig. 5 is a flow chart illustrating the placement of a new ad or product description, according to one embodiment of the present invention;

Fig. 6 is a flow chart illustrating a search for matching interests, according to one embodiment of the present invention;

Fig. 7 is a flow chart illustrating a callback routine, according to one embodiment of the present invention;

Fig. 8 is a flow chart illustrating steps performed when a buyer requests a catalog, according to one embodiment of the present invention;

Fig. 9 is a flow chart illustrating catalog item playback; according to one embodiment of the present invention;

Fig. 10 is a flow chart illustrating activation of an agent to select items for a catalog, according to one embodiment of the present invention;

Fig. 11 is a flow chart illustrating operation of a unified system including self-publishing catalog, coupon handling, catalog orders and virtual gift cards, according to one embodiment of the present invention;

Fig. 12 is a flow chart illustrating a procedure for ordering from a catalog, according to one embodiment of the present invention;

Fig. 13 illustrates a procedure for establishing a new agent, according to one embodiment of the present invention;

Fig. 14 illustrates a procedure for modifying an existing agent, according to one embodiment of the present invention; and

Fig. 15 illustrates a procedure for screening calls, in an interactive system, according to one embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

As depicted in Fig 1, an interactive computer system 1010 is coupled to any or all of a plurality of input devices 1012 and output devices 1014. The input and output devices 1012, 1014, are coupled to an I/O connect and interface device 1016. The connect and interface device can include, for example a fax server, a telephone answering and/or switch system, or an interactive voice response (IVR) system. The I/O connect and interface is coupled to one or more databases 1018 which include non-volatile memory devices for storing database information, a database server (which can be, for example, a personal computer, workstation, or mainframe) and associated software. The software can be any of a number of commercially available database software packages and/or can be specifically programmed for one or more of the embodiments described below. Preferably, the I/O connect and interface is also coupled to operator facilities 1020 to permit connection of a user to an operator, as described below. Operation of the I/O connect and interface 1016 and database 1018 is controlled by a control device 1022 which can be, for example, a personal computer, workstation or mainframe. The control 1022 can be a separate unit from the database server or can be the same computer.

The user accesses the interactive computer system 1010 through any of a plurality of input devices 1012 and output devices 1014. Fig 1 illustrates examples of some possible input and output devices, although any I/O devices that permit the user to effectively communicate with the interactive computer can be used. Telephone input 1024 can be via keypad

input, particularly in a dual-tone multi frequency (DTMF) telephone system, or can rely on voice recognition software (typically e.g., installed in the computer system 1010) to permit verbal input of data and commands. A telefax input can be sent to an operator for manual entry, can be sent to a scanner, for example for detection of check-box markings, or can be processed by optical character recognition (OCR) software to permit faxing of printed, typed or handwritten input. A computer can be used for inputting data and commands, for example, by using a personal computer 1028 connected using a dial-up modem, a Local Area Network (LAN), or a wireless network (e.g. a radio network). Any of a number of styles of computer can be used including, personal computers, laptops, palmtops, notebook computers, personal digital assistants, workstations, and mainframes. The computer 1028 can accept input through any of a variety of methods, including keyboard input, mouse input, touch-screen input, pen or stylus input, oral or voice-activated or voice-recognition input and the like. Input can include card-reader input 1030 such as facilities for reading encoded cards such as credit cards (e.g. at point-of-purchase), debit cards, banking cards, identification cards, or other item or card readers including bar-code readers. Input can also be accepted at automatic teller machines 1032 which typically provide both card readers and keyboards.

Output from the interactive system 1010 to the user can be by a number of output devices including telephone, telefax and personal computer. Output can be digital or analog and can include audio, video or other information. Further, output facilities such as cable facilities (including video and audio cables and/or including wire and optical cables) 1034 and mail or other shipping facilities 1036 can provide output to the user.

Self-publishing individualized catalogue

A particular implementation of an interactive computer system 1010 is depicted in Fig 2 which illustrates a system

which can be used in connection with a self-publishing catalogue application. The catalogue may include information regarding products from a single source (such as the catalogue for a retail outlet) or can be a compilation of products from a number of sources (such as a co-op). In the former case, little information need be stored regarding "sellers" since there is only one source. In the latter case, it may be desired to maintain an extensive database on various sellers, as described more thoroughly below. This configuration comprises a telephone switch such as PBX (private branch exchange) 12, an interactive voice response (IVR) system 14, a database server (DBS) 16, and a FAX server 18. PBX 12 is connected to one or more telephone lines 20 through which users (buyers and sellers) amy communicate with the system, either by voice or fax. A suitable PBX is the Summa/Four switch available from Summa. In general, any switch capable of responding to control by an external computer may be used.

IVR 14 is a computer specialized for storing digital audio scripts, and for playing back such scripts in response to digital or touch tone inputs. IVR 14 is coupled to PBX 12 via T1 telephone line 22, such that the IVR can be coupled directly to a user who calls the system via telephone line 20. However, in a preferred implementation of the present invention, the IVR preferably includes the ability to concatenate individual words or phrases to produce voice output.

An IVR with concatenation ability is to be contrasted with a simple voice mail system. In a voice mail system, one can store a number of voice scripts, and means for permitting a user to access different scripts depending upon touch tones or other data input by the user. Each script, however, is a complete message, and cannot be further broken down. This limitation means that the individual words and other data within the script are not searchable. In contrast, in an IVR system with concatenation capability, individual words and/or phrases are stored in voice form, while the messages that will be built up from such words and phrases are stored in a conventional text-type database. When a message from the

Fig. 14 illustrates a procedure for modifying an existing agent, according to one embodiment of the present invention; and

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database is to be converted into voice form, the IVR retrieves the voice corresponding to each word or phrase, and concatenates these individual voice segments into an output voice message. Suitable IVR's with concatenation ability are the Voice Processing Series (VPS) models available from Periphonics.

DBS 16 is a general-purpose computer programmed for database operations. In the illustrated embodiment, DBS 16 manages three text (as opposed to voice) databases: ad database 30, seller database 34, and buyer database 36. Ad database 30 comprises an electronic equivalent of the ads typically included in a catalog. Seller database 34 lists the sellers that have registered to use the system, while buyer database 36 list the buyers that have registered to use the system or who are potential buyers.

The seller and buyer databases also include information pertinent to the preferences and interests of the buyers and sellers and represents one component of the agent. This information is gathered in any of a number of ways. The information may be requested at the time the seller requests an entry in the catalogue or at the time a buyer calls to place an order or make an inquiry. The information may be gathered automatically using the IVR system or a computer-controlled text script system, or the information may by gathered by an operator for manual entry. Preferably the buyer information will include information regarding how the buyer wishes to pay for purchases (e.g. credit card information), and shipping information (e.g. preferred type of shipping, shipping address). The information preferably also includes information related to the actual or likely interests of the buyer, such as purchase histories, demographic information, expressed interests such as type of employment, hobbies, current equipment, and the like. In addition to or in place of gathering information directly from the buyer, this information can also be gathered automatically (e.g. using telephone caller identification systems) or as a result of the users's inquiries or purchases within the system, or by obtaining the information from a commercial information source

(such as a commercial mailing list with demographic information). Similarly, information regarding the advertiser or seller can be gathered, including information regarding the history of ad placements or catalogue entries and the like.

DBS 16 is coupled to IVR 14 via serial link 24, and to PBX 12 via serial link 26. The DBS includes terminal 40 through which an operator can interact with and control the DBS. Terminal 40 may be a conventional personal computer. The operator of terminal 40 wears headset 42 that includes headphones 44 and microphone 46. The headset is coupled to PBX 12, so that the operator can engage in conversations with callers via the PBX and telephone line 20.

FAX server 18 is coupled to PBX 12 via telephone line 50, and to DBS 16, via serial line 52. The FAX sever may be a conventional personal computer with a fax board.

The operation of the system shown in FIGURE 2 is outlined in the flow chars to FIGURES 3-13. The general operation of an interactive system is depicted in Fig 3. The I/O connect/interface system 1016 receives an initial input such as by answering a telephone call or computer modem call 1042. The I/O connect interface system 1016 sends a short introductory message to the user, briefly explaining how to operate the system and preferably inviting the inexperienced user to request more detailed information 1044. The I/O connect/interface system 1016 monitors the input from the user and in particular checks for user input which indicates the user is requesting help 1046 or is requesting to be connected to an operator 1048, whereupon the I/O connect/interface system 1016 takes the appropriate actions of invoking context sensitive help routines 1050 or connecting the caller to an operator 1052. In the absence of such inputs, the I/O connect/interface system 1016 prompts the user to make a choice among the available options (such as those described more thoroughly below) 1054, receives the user choice and branches to the appropriate subroutine 1056, such as those described below. Upon returning from the branch or subroutine 1058, the I/O connect/interface system 1016 loops 1060 to

check for help or operator requests and to prompt for the next user choice.

A particular implementation of the system depicted in Fig 3 involves a system for publishing a catalogue which is tailored to the likely interests of buyers, based on the buyer's agent or agents. The agent or agents preferably include three main components: data regarding buyer preferences and/or characteristics (stored in the buyer database, as described above), hardware and activatable software for matching the buyers's interests or characteristics to potential catalogue entries in order to compile a catalogue which will be of interest to the buyer (e.g., as described below), and facilities for transmitting the catalogue to the buyer(e.g. as depicted in Fig 1).

As indicated in FIGURE 4, the operation of the system is triggered by receipt of an incoming call to the PBX via telephone line 20. In step 100, the PBX first determines whether the incoming call is voice or fax. If fax, then step 102 connects the incoming call to fax server 18 via telephone line 50. The fax server receives the fax, and the fax may then be printed by a printer coupled to FAX server 18 or to DBS 16.

If the incoming call is voice, the step 104 is executed. In this step, the PBX sends a message to DBS 16 via serial line 26, indicating that a new call has been received. In return, the DBS sends back a transaction identifier (TransId) that will be used to uniquely identify this call. In step 106, the PBX then connects the call to the IVR via telephone line 22, and transmits the transaction identifier to the IVR via telephone line 22, using touch tone signals.

The steps in blocks 100-106 in FIGURE 4 are performed by PBX 12, while the remaining steps in this Figure are performed by IVR 14. In response to receipt of the transaction identifier for the PBX, the IVR in step 110 plays a pre-stored new caller voice script, and transmits this script to the caller via PBX 12 and telephone line 20. This script may include any introductory information, recently added features of the system, instructions on how to use the system, etc.

The script then asks the caller to identify a desired function, for example by pressing designated touch tone keys on the caller's telephone. Block 112 then analyzes the function that the caller has requested, and routes control accordingly.

The principal functions that the caller may request depend upon whether the caller is a seller or buyer. If the caller is a seller, then the caller can ask to place a new product in the database used to compile the catalogue. If the caller is a buyer, then the caller can ask the system to search for products that match its needs, and to generate a catalogue. In a particular implementation, numerous other functions could be selected at this point. For a seller, such additional functions could include changing an existing product description cancelling a product, playing back a product description previously placed, and modifying information concerning the seller itself, such as its phone number or address, etc. For a buyer, such additional functions could include modifying, cancelling or renewing a previously created agent.

If the incoming caller identifies itself as a seller wishing to place a product description or advertisement then the IVR identifies this as a non-IVR based function, and sends an operator request message to DBS 16 via serial line 24, as shown in block 116 of FIGURE 4. In response to the operator request message, the DBS begins prompting the operator at terminal 40 for information relating to the new product. In turn, the operator relays these requests to the seller via headset 42 and switch 12, receives the seller's responses via the same path, and inputs such responses to DBS 16, to create a new product description in ad database 30. Although this step could be automated using the IVR, a human operator can readily accommodate the amount of variability involved in placing an new product description, explaining to the seller the options available, etc.

FIGURE 5 provides further details concerning the steps used to create a new ad in ad database 30. In step 150, the operator asks the seller to identify itself, such as by

supplying a seller ID or other identifying information if the catalogue is configured to serve only a single seller, steps 150-154 can be skipped. The operator then checks seller database 34, to determine whether the seller is already registered in the system. If the caller is a new seller, then the operator obtains information form the seller in block 154, and the new seller is added to the seller database. In block 156, the operator asks the seller if it wished to place a new product description in the system. Assuming that the answer is yes, the operator obtains the information relating to the new product in step 160. The information requested from the seller corresponds to the fields of the ad database. The fields in the ad database will depend on the type of products being listed in catalogues. For example, if the catalogues are being produces for a single software retail outlet, the fields might include such items as type of application (business, game, home management, legal), type of program (database, spreadsheet, word processor), price, features, availability, discounts, sales, coupons that can be used or provided, etc.

DBS 16 then assigns an ad identifier (AdId), and the new product with its AdId is stored in ad database 30. DBS 16 then searches want ad database 32, in step 164, to determine if any of the previously stored agents have needs, interests or characteristics which match the new product just received from the seller. This step could of course be performed either before or after the new product is actually placed in the ad database. Alternatively, the addition of a new product can cause the calling of a subroutine which scans all agents to determine which, if any, are to be activated by a product addition and which activates such agents (e.g. by calling a subroutine), as described below.

One technique for performing this matching step is outlined in FIGURE 6. In this approach, the matching fields in the ad and agent databases are broken down into basic fields (e.g. type of program and price), and option fields (all remaining matching fields). In step 180, the first or next agent is retrieved from the agent database. Step 182

then compares the basic fields of the new product to those of the agent. For example, step 182 compares the program type of the new product to the buyer's agent's interest profile. If the program type is not within the buyer's interest area, then there is no match, and control returns to block 180 to retrieve the next agent. Step 184, performs a similar test for price. For price, the matching criteria is plus or minus 20%. This "tolerance" perimeter can be varied, and could also be specified by the buyer.

If the basic field tests in blocks 182-184 are all successfully negotiated, then the option fields are tested. For each option, if blocks 192 and 194 determine that the agent requires the option but that the option is not present in the product, there is no match, and processing returns to step 180. On the other hand, if a given option is not required, or is required and present, processing returns to block 190 to test the next option.

When all options have been successfully tested, a match has been found. In this case, in step 196, the AdId of the new product is placed in a catalogue "bin" for this agent, together with "delivery" information corresponding to the agent's information. The delivery information can include the buyer's phone number, together with time information specifying the times that the phone number should be called. Alternatively, the agent may reference a buyer ID which is used to retrieve the delivery information from buyer database 36. When processing of the agent database is complete (or simultaneously with processing), control returns to step 156 in FIGURE 5. At this point, the operator determines if the seller has another new product to place. If so, then the above described steps are repeated. If not, then processing proceeds to block 170 to perform various accounting functions, and the placement of the new product by the seller is complete.

As mentioned above, provision may also be made for sellers to fax product description to the system via PBX 12 and FAX server 18. In this case, the fax is printed or displayed to the operator of terminal 40, and the operator

then inputs the information shown on the fax to create a new product description in ad database 30. In this case, the steps shown in FIGURE 6 are again carried out, to determine if the newly placed product matches any agent interests or characteristics. The catalogue may be prepared and mailed (or otherwise transmitted) automatically, or the buyer can be consulted regarding transmission of the catalogue.

FIGURE 7 illustrates an optional callback routine that determines if the buyer wants a catalogue. In step 200, the DBS scans the callback queue, to determine if any callbacks are scheduled to be made at the present time. Each callback record includes the buyer's phone number and time information concerning when callbacks should be directed to that phone number. Block 202 determines if the time information in any callback records matches the current date and time.

For callback records in which the information matches, step 204 pulls such records from the callback queue, and sends them (e.g. in text form) to the IVR. In step 206, the IVR dials the buyer's phone number contained in the callback record, and waits for a response. If a voice response is not received, then the IVR sends a corresponding message to the DBS. The DBS then marks the time of the attempted callback in the callback queue record, so that a set period of time can be established between callback attempts in step 202. The callback routine resumes scanning in step 200. If a voice response is received, then in step 210, the IVR sends a voice message to the buyer via the PBX, asking the buyer to make a predetermined touch tone response if the buyer would like the catalogue transmitted at the present time. If the buyer's response is positive, the catalogue is prepared and sent 216. If the buyer requests telephone transmission of the catalogue, then the IVR assembles a voice message by identifying the individual words and phrases contained in the product description, retrieving the digital voice records corresponding to such words and phrases, and concatenating the individual voice records into a single message. This message is then relayed to the buyer in voice form via telephone switch 12 and telephone line 20. When product description

playback is complete, the IVR sends a corresponding message to the DBS, and the DBS removes the callback record from the queue in step 218, and then resumes scanning.

If the buyer does not wish to received a catalogue at the present time, the buyer may provide a negative response. The buyer may call in at a later time to request a catalogue, as described below. An option could also be provided to enable a buyer to request receipt of the catalogue via fax, modem, mail, cable, etc.

FIGURE 8 illustrates the steps performed when a buyer calls the system to request a search. In general, a buyer's catalogue request can be handled by an operator at terminal 40, or by IVR 14. The following discussion will assume that the buyer's catalogue request is routed through the operator of terminal 40. However, analogous functions could be handled by the IVR, for systems in which a lower degree of flexibility is suitable.

Referring again briefly to FIGURE 4, for the case of a buyer's catalogue request to be handled by an operator, IVR 14 will send an operator request message to DBS 16, as shown in step 116. Referring now to FIGURE 8, the operator at terminal 40 will then obtain information form the buyer, in step 250, in order to create a "profile" for the catalogue request. In general, a "profile" corresponds to an agent record, except that the profile has not yet been stored in the agent database. Thus the information requested by the operator will correspond to the fields of the agent database. The operator also obtains an output method from the buyer, e.g., voice or fax.

For the case in which the buyer, catalogue request is being handled by the IVR, the IVR would at this point send the profile and the output method to DBS 16. However, for the case being considered in which the buyer's search request is handled by the operator, the DBS already has this data. In either case, the DBS proceeds in step 252 to search ad database 30 for products matching the profile. Block 254 then determines whether any matches have been found. If not, a suitable message is sent to the buyer in step 256, via either

the operator or the IVR. Control then returns to block 250 to permit the buyer to specify a different profile or quit.

If step 254 determines that matches have been found, then step 260 determines the output method that the buyer has specified. If fax output has been specified, then step 262 sends the matching ads to FAX server 18 for output via PBX 12. Control then returns to step 250. If voice output has been specified, then step 264 sends the matching ads to IVR 14. In step 266, the IVR proceeds to play the matching ads back to the buyer. This process is also further described below. In step 270, the buyer is then asked whether it wishes to convert the currently searched profile into an agent. If the buyer's response is affirmative, then the IVR sends a corresponding message to DBS 16, and the DBS proceeds to store the profile as a new agent in the agent database 32. In both cases, control then returns to step 250.

FIGURE 9 illustrates a preferred, interactive technique for carrying out the playback of matching ads by the IVR, in step 266 of FIGURE 8. As in the case of playback of the callback queue described above, the IVR performs the playback by assembling a voice message in real time. The voice message is assembled by identifying the individual words and phrases contained in the ad, retrieving the digital voice records corresponding to such words and phrases, and concatenating the individual voice records into an output message. For the purpose of this playback, the fields in each ad are preferably separated into "summary" fields and "detail" fields. In general, the summary fields of the ads are assembled and played back sequentially, beginning with the first product in step 300, and ending with the last product in step 310. However, during the playback, the buyer can control the sequence e.g. using predetermined touch tone keys. For example, one touch tone key would correspond to the illustrated "More" function that causes the detail fields of the current ad to be assembled and played back. If the More function is not used, then detail fields are omitted. A second touch tone key would correspond to the repeat function, which causes either a repeat of the summary fields of the

current product description if details are currently being played back, or causes the prior ad to played back in the case of summary playout. A third key would be dedicated to the skip function which causes the playback to skip ahead to the next ad in the sequence.

In the example above, matching is accomplished by the system comparing a new product to each agent in the system. The system can also be configured so that each agent is proactive in the process, in the sense that agents can, at specified times or under specified conditions, become activated 1070 to search the product database for matches to themselves. As depicted in Fig. 10, a number of events can be used to activate an agent. One such event is the addition of a new item (or addition of a specified type of new item) to the database 1072. Another event is the passage of a specified period of time, so that the agent is periodically activated. 1074 Another event is the modification of the agent profile or portfolio 1076. Each agent can be configured to activate upon different events or conditions (or can be a purely passive agent, only storing information for query by other processes, such as in Figs 4-9).

Once the agent is activated it executes a subroutine designed to select items which are of most interest for inclusion in a catalogue. In the selection procedure depicted in Fig. 6, selection was by an elimination process, in which the product must meet certain criteria. Fig 10 depicts an alternative selection process in which each product is assigned a score representing the closeness-of-fit to the agent's defined interest or characteristics. In this way, a predetermined number N of products which are the closest fit to the interest or characteristics of the agent can be selected. Any of a number of criteria can be used for selection. The example illustrated in Fig 10 calculates three scores based on the agent's interests, demographic information and purchase history. The procedure loops through all products 1078, 1080, calculating a score for each. The system could be configured to store the scores for old products and to calculate and store scores only for new or ?????? product

description. In the depicted example, an interest score (IS) 1082 is calculated on the basis of a score representing the product type and a score representing the agent's interest. If the agent has more than one interest, the interest closest to the product type score can be used. Alternatively, a weighted average of the difference of all agent interests can be used. As one example, if the products are all software, the system could assign a score of 1000 to word processors, 500 to spreadsheets, 50 to databases and 900 to forms generators. Forms generator scores are close to word processor scores, since there are similarities in the products. Suppose the agent has an interest in word processing. If the product is a forms generator, IS = 100 (a relatively good or low score) If the product is a database, IS = 850 (a high or bad score). Thus, this agent will generate a catalogue which includes word processors and forms generators but will not likely include databases.

The demographic score (DS) 1084 is calculated by comparing the buyer's demographic data with the demographic data which describes the most likely buyer of the product. Again the score is taken as the absolute value of the difference.

The Product history sore (PS) 1086 is, similarly, the absolute value of the difference between the product type score and the score for the closest previous product purchased by the buyer. Thus an agent has stored information about previous purchases so that if the buyer has purchased a user interface (such as WINDOWS™), the score for related products (e.g. Word for WIndows™) will be relatively low (i.e. good).

The sum of the three scores is calculated 1088 for each product and stored. After all products have been reviewed 1080, the products with the lowest scores can be selected for inclusion in the catalog for this buyer.

The system described here includes software running on various integrations of hardware, which accomplishes several tasks, including the "self-publishing" or automated publication of catalogs, by software "agents". Agents are created when users interact with the system described here,

and represent users in on-going transactions within and between databases outside the consumer direct interaction and beyond their initial interaction. Additionally, this system leverages the abilities of such a system to add/interactive benefits to both the advertiser and consumers, including certain virtual products as described below toward the end of created highly automated self publishing, customer servicing and new services.

The system provides inventory and ordering functions. At least some features center on (1) the "agent" which resides in the database representing each consumer and gathering information on consumer interests and characteristics, (2) the agent's function of automatically compiling and/or transmitting custom catalogs of specific interest to the consumer represented by the agent and (3) and the systems function of offering advertisers "virtual" invoices, greeting/gift cards and other interactive support of the sale form the catalog. A virtual invoice consists of a telephone number and invoice number posted on the item ordered and given to the buyer. It can be used to track the item instantly, seek customer support for the product through the system and provide other related information by voice (computer concatenated or text-to-speech), fax back, electronic or other means. The virtual document facility can be used to send documentation for the product via fax or electronic means while simultaneously serving to register the user upon their calling, confirming delivery.

For gift catalogs, or retail sales services conducted by telephone or electronic means the system can create a "virtual greeting card" which is be shipped with the item sold to recipient in the form of a phone number and a second "Greeting Number". The recipient would call the telephone number on the "virtual gift card" and hear a voice message recorded by the customer sending the gift (stored in a voice mail box in the system). The recipient can also choose to hear more information about the catalog, order a catalog or go "on-line" to respond to the sender. Rather than sending paper registration or documentation with an item or product shipped,

a "virtual manual" or "virtual registration card" could be sent. Again, a telephone number sent with the item and delivered in real time to the buyer as they ordered, allows the customer to request information by whatever means they wanted in terms of documentation registration and service. This would limit paperwork on many orders and provide the customer special premiums for easy quick registration or other desired action.

This product would run on equipment similar or identical to that disclosed in SN 07/819,484 (Attorney. docket ECCO-1-6164) and the Continuation-in-Part thereof Serial No. 07/945,748, filed on December 23, 1992, (Attorney docket no. ECCO-1-6424). That disclosure features a computer "Agent" created inside a database of classified advertising, which "remembers" (i.e. stores in memory) every caller's request. A caller calls into the system and builds a query (answering by touch tone or other means including an operator or a personal computer or other device). Whatever data (ads) are available are delivered to the caller instantly, by phone (concatenated voice), FAX (including any photos attached to the ad), or other communication devices. The Agent will then reside in the system, acting as the buyer or seller's "representative" examining every piece of incoming information. When new data (in this case ads) are entered on to the system, the Agent stores the new ad's identification number, and then notifies the consumer by whatever means and at whatever time the consumer has chosen, or leaves a message when it detects a voice mail system (e.g. due to failure to detect a touch tone response). Preferably, the system assigns a number to each incoming ad (which could apply to any media including broadcast or personal communication devices).

When the caller calls regarding one specific ad number, the system automatically searches the entire inventory of the system or of the specific advertiser for similar items matching parameters in the database for the advertised product. One call thus lets the consumer quickly find out about all similar properties in the database, e.g. based on criteria the consumer creates (and based on the fields chosen

by the system as "comparable" items). This makes the print, broadcast or personal communications device interactive.

Finally, the system creates a number for each "Agent" and tells the consumer that number can be used to call back into the system to instantly check on any new items on the system. This is for use by, e.g. consumers who do not want the system to contact them automatically.

One embodiment of the present inventions includes a self publishing interactive catalog, utilizing print, fax, personal computers or person communications devices. It, too, creates an "Agent" for each shopper. In one embodiment, the company provides a catalog number for each product and, optionally, and provide certain premium interactive services which can be utilized by the catalog customer, as described above. The system can create catalogs to be published electronically (by PC or FAX or other means, including telephonic means (text to speech or concatenated speech system. There can also be mass mailed catalogs, but the idea behind the system is to reduce their number and target their mailing. Also, the system can let those with no catalog find what they are looking for 24 hours a day using a PC on line and/or interactive voice system programmed with a sophisticated relational database. Product registration can also occur 24 hours a day as can invoice information using a unique product/customer number created for each transaction, combing the various technologies used by this system. Direct connect options for operator help can be made available to take information such as credit card numbers, addresses, etc., to set up ID (accounts) to simplify the ordering and information gather process described below.

The agent represents each consumer, and includes one or more activatable computer routines which continuously and/or periodically represent the consumer in the database and, based on new activity in the system, automatically publishes catalogs tailored to the characteristics or likely needs of the consumer. In one embodiment, an interactive Print Number is provided, by which a consumer who chooses to call about one item in the catalog is informed about all similar products (by

vender, or function, or other parameter e.g. set by the publisher).

The caller enters the system e.g. via telephone, computer or other communication-device with or without an "Agent", ID or catalog number. An agent number can be provided by the caller's direct interaction with the system, as described below, or by other means such as filling out cards at retail outlets, by direct mail, or electronic or telephonic means. With and ID or Agent number, the system recognizes the caller. The caller can order by catalog number including ordering catalogs, request an update based on previous requests (the agent's work on behalf of the caller) or add or delete areas/items of interest; or direct connect to an operator for special help. All activity is "observed" by the agent which continuously shapes the agent file.

If the caller has an existing account and wishes to order a new product, they can simply enter the product number from a catalog or other source. The system will then take care of getting the product shipped. It retrieves the billing, shipping and other information from the account file. The new information about the order will be added to the customer's "agent" profile.

Periodically, the system will automatically publish bulletins and custom catalogs for each agent, with new information of interest to the caller/customer, based on the criteria in their agent file. Windows™ users, for example, will hear about Windows™ products, MacIntosh™ users about MacIntosh™ products. WinWord™ users will hear about all related WINWORD products. The Agent will, for example, immediately notify consumers of updates, new releases, or closely related products, by fax, mail or even phone. Not only can these custom catalogs be sent by fax, mail, PC, they can be used as covers for mass mailed catalogs, making the mass mailed version custom to each user and more likely to draw attention. There can also be an "urgent notification" function by which the system will automatically telephone, fax or page a caller when the product the need arrives. This can

be particularly useful to small businesses who need prompt delivery.

The system also permit new callers, without an ID, to build an agent based, on the query they make using either an interactive voice response system or other means. Operator assistance can be made available to speed this process up. Once a caller has made a request and gained an ID, the caller can choose to ask to be notified with new information of interest, or be given an Agent (ID) number with which they can call back at any time to request instant, self-published catalogs of interest, or to order 24 hours a day. The system can feature a direct connect option to a human operator, or vender in the case of help service.

The system would shorten order time and automate order fulfillment by sending and order in real time to the point of shipping, while also updating company inventory files and producing demand reports. "Just in time" inventory control can be used, routing the order directly to manufacturers.

The statistical benefits of assigning the agent to each caller, and having it create a virtual catalog for each user, are many. The company using this system can track demand, target customers, save money and time. It can also allow the company to tailor education programs to certain clusters of users, in the form of custom newsletter or other information a manufacturer might want sent to certain customers.

The company can determine the frequency with which it publishes bulletins or catalogs. One command can activate all "agents" to update their catalogue bins with new information and publish a catalog for each user. The agent ID can also be used to target and reward small business and frequent users with special promotions, discounts and other benefits. The system can be programmed to greet each user personally when their ID is entered. This can be done by allowing the user to speak their name, or through concatenation techniques or on line via PC.

Coupon delivery and processing

The concept of an agent has numerous other uses in an interactive computing system, in addition to assisting in provision of a self-publishing catalogue.

According to one embodiment the system functions to deliver to consumers coupons which are tailored to their particular interest or to products identical to or associated with those about which they have in inquired or have purchased in any way. This system can function as part of an interactive voice response system, a multi-media on line computer system, or even as an addition to a marketing system database much like those currently in use. As one example, assume that the caller is calling an interactive voice response system or using a personal computer or using an operator to inquire about a particular product. The call could involve a catalog order for a product or a request to search for a particular type of item in an electronic classified, or a request to an information service about particular information categories. Once the consumer makes this request, and "agent" or an "identity" or an "id number" is created for this consumer. The agent monitors all incoming data to the system and compares it to the user profile that the customer creates when they contact any of the above systems. It would also track the phone number (and therefore likely geographical location of) the consumer. through means now available and described here and telecommunications techniques such as AN or fiber optic technologies still emerging. The customer initially and optionally, will be asked to answer a number of questions about their interest. If they do not answer these questions, the system will automatically keep track of what they order, ask about, or which portion of the category of information they interact with and build a portfolio for this consumer. The system, to be most effective, requests that the consumer either ask the system to automatically notify it with new information in some category (by PC, fax or telephone or even a live operator) or it assumes that the consumer, each time they contact any of

the above systems, requests immediate delivery of the product or information.

The system can be configured to build a data base of valuable coupons (such as a free oil change, a free dinner for one, fifty dollars off rental of an apartment) and store these coupons in a database so that they can be accessed easily. A second database (or the same database) will store information about the consumer and his request. The two systems will communicate with each other to constantly update the consumer's portfolio and build a collection of coupons. These coupons will be delivered to the consumer either when they request information or when they purchase a product or shortly after they purchase a product, or on a periodic basis. The system is programmed to make logical connections between types of products and the coupons. For example, if a customer were to request information about Work Window™ the system will look for computer-related and software-related coupons, discounts, in general and specifically related to the category the consumer has accessed. These coupons can be delivered automatically e.g. by fax either separately, as a package of coupons or by mail e.g. separately, as a package of coupons or as the cover sheet to a fax containing the information the consumer requested or generated and delivered with the product, such as a box of software that the consumer has requested or it would be delivered after the product by mail, fax or PC. The coupons that each consumer receives are uniquely published for that consumer and tailored to their interests to be of the most value to that particular consumer.

To give another example, in a Classified By Telephone system, if a consumer were to request all classified ads about Hondas™, they would receive coupons relating to particular Honda™ dealerships, relating to Honda™ service, relating to new dealerships for Honda™, and perhaps relating to other automotive services. In addition, they can receive unrelated coupons of value (such as free restaurants) as a add on value to make the package of coupons more valuable. The described events happen automatically, with the two databases using the agent to relate the database of coupons and/or information

from vendors with database of customers profiles which are updated e.g. as the consumer contacts the system or utilizes any of the above. In addition, coupons which relate to new products would be monitored by the consumer agent. For example, if a company decided to run a special on a whole fleet of software products related to Windows™, all the agents in the agent database who had consumers interested in such products would be notified and they would deliver coupons, or discount offers related to the new product automatically to the consumer by any of the means above. This couponing system is related the self-publishing catalog system previously described. However, the couponing system can function without any catalog features. It can function with electrotonic classified ads. It can function with an inventory control system in a grocery store or it can function with any other type of sales inventory control system. In this embodiment, two databases uniquely and automatically publish the specific coupons and deliver them by the means which have been described.

In one embodiment, there would be a category of virtual coupons. Virtual coupons are coupons that the consumer receives electronically, e.g. over the telephone or PC or personal communication devise or by other means of communication, but they have no physical presence. The are not pieces of paper. They are, e.g., passwords which the consumer could take to a vendor and enabling the consumer to obtain a discount by giving the password. In one embodiment, there is a PIN/COUPON telephone number, which the consumer would have to call to get the "virtual" coupon password. In calling the consumer, in one embodiment, is offered the chance to 1) Hear other offers (advertisements) with the inducement to do so being not only the coupon, but e.g. the offer to enter a contest simply by making the call and entering their telephone number and other information. Using the telephone number, gathered as above, or by means of AIN, or by means of the consumer voluntarily leaving it, the coupon system can, in one embodiment, geographically sort or modify the coupons to select those closest to the consumer. The system generates

the passwords or virtual coupons for the customer and notifies the advertiser of what the virtual coupon password was by fax or by telephone or other electronic means or by mail. The vendor can notify the system to cancel such coupon offers or to add them to the system. In the case of the virtual coupon "PIN", the virtual coupon can be used to enter contests (e.g. instantly with potential of instant winners who received even bigger coupon discounts by calling the PIN, hearing the commercial message and learning their prize).

This interactive system can be accessible by phone, PC, fax or other personal communications device. Accordingly, in one embodiment, the coupon system operates on hardware similar to that disclosed in U.S. patent application S/N 07/819,484, and U.S. patent application S/N 07/995,798. However, the coupon system can also be employed in connection with an inventory control system such as the cash registers-based systems at retail outlets. The system agent can ask the system to automatically notify them in the future at set times using various opinions, with new information in some category. This system can communicate by PC, fax or telephone or other information delivery devices, including but not limited to pagers or personal digital assistants, using the delivery methods associated with each delivery system. The customer can ask a live operator to fulfil the request. The coupon system can function whether the consumer immediately requests delivery of the product or information each time they contact any of the above systems or only make one contact with the system. These coupons will be delivered to the consumer at any and all of a number of different times including, for example, when they request information or; when they purchase a product or; shortly after they purchase a product; at a specified time after the original purchase or request for information. The time for the delivery of information is; in this embodiment, based on either a specific calendar date (such as six months after purchase) or a specific event (such as the release of the next upgrade). The coupon delivery can be established by the system for all customers or tailored to

each customs using information provided by the agent, including customers preferences.

The coupons can be delivered in diverse manners. One is automatically by fax (either as a part of a package of coupons or on a stand-alone basis). A second delivery method is by mail (either separately or as a part of a package of coupons). A third is the cover sheet to a fax containing the information the consumer requested or generated. A fourth is when the product is actually delivered, such as in the box of software that the consumer has purchased. Fifth, coupons can be delivered by mail, fax or PC after the product has been shipped or after it has been delivered. (Here, the goal is separate delivery). This typically involves capturing information about the consumer, by live operator or IVR. The consumer can receive the information in multiple-media-simultaneously, or, they can receive some of the information in one format and other information in another format.

In one embodiment, consumers who had not accessed the system within a specified period of time could be delivered numbered coupons, including some of known interest, and some which might randomly be provided, and asked to update their information or request. If they did not update the system proactively, their "Agent" would be updated automatically by their use of the coupons (because they are numbered, linked to the individual consumer, such as by being bar coded, so that the vender could quickly report back on their use).

Automatic notification of advertisers

In one embodiment the system can accomplish all or some of the following functions normally requiring a large staff of operators and sales people, ranging from reporting ad expiration to prompting changes and renewal of ads based on e.g. an intelligent and automatic analysis of the ad's "experience" in the publication. In this embodiment, every AD is assigned an "identity" or agent in the advertising system. The agent monitors an advertiser's ads, preferably including demand. The agent tells the advertizer of required action or suggests action to improve sales (relisting, changing the ad,

supplying fresh information). The system is thus tracking content of the advertising section. The agent can be programmed to merely notify (re-list/cancel/expiration notice), to suggest, or to prompt (update information). The agent can inform the advertiser of demand to date (e.g. number of queries by telephone or fax or electronic means). Using an agent automates this service and attaches such information to each ad. The agent can automatically offer additional services e.g. the service of offering coupons to the advertiser's customers for discounted services. The system would work within, e.g., the classified-by -telephone system or traditional print or yellow pages, to automatically call the advertiser (e.g. using a computer database and an automated fax or automated dialer, Interactive Voice Response or electronic integrated system) to notify the advertiser before their ad is set to expire.

One advantage of this system is that it combines the intelligence of the system with various hardware configurations to reduce labor costs (replacing many operators who now perform these functions). In a talking yellow pages application, for example, it has proved difficult to get advertisers such as restaurants to update their "voice ads" (voice mail boxes) in their yellow page's ads, which are printed one or twice a year. As one example, this system would automatically fax a blank menu to the restaurant, each day or week, telling them to fill it out and return it by fax for "fax and store" use; or they could be reminded by fax or phone (or pager) to call a specific number to update their voice mail box with special menus, coupon offers, or other information which is critical to the success of such talking yellow pages. The information would then be read out by the system in use by the publication. In the case of traditional classified advertisers the publisher would assign a number to each ad, to each advertiser, and attach instructions for the call back depending on the type of ad. A "sunset" or "renewal" date is assigned to each ad; directions for contact (including methods, times) and the ability to customize each renewal contact at the time of entry/listing. For example,

the agent can be programmed to call this advertiser when the ad is about to expire, offer them a 50% discount to automatically renew the ad with the same billing process used in the prior transaction, e.g. by simply pushing "1", on a telephone keypad. The advertiser can be offered other options, e.g. to cancel this ad press "2"; to speak with a customer service representative to change your ad, push 5. This direct connect feature can be intelligently programmed to connect to different places, depending on the demand report indicating interest in ad (for example, if there were no reads of the ad, connect to a specialist customer service rep) or if it is a menu update and they choose direct connect (rather than push a number to indicate that they will FAX in the new menu) another agent can be queued up to respond. The system has the ability to track ads on many levels, react to instruction sets for each ad, and automatically execute those instruction. The benefits include reducing cost of renewal, ease of use (yellow pages) and ability to track thousands of ads simultaneously with minimal staff.

Unified system

The above described functions of providing a self-publishing catalogue, providing and processing coupons and notifying advertisers of the need to renew advertising can be accommodated in a single system. Figs 11 - 14 generally depict such a system. When a new caller enters the system 1102, information regarding the identity of the caller can be gathered 1104. The system (e.g. via computer text over a modem connection, via voice over an IVR, or by an operator) can inquire if the caller has an agent number that the caller wishes to use. If not, the caller can be asked if he wishes to establish a new agent, using a procedure described below. The caller can then select among a number of options. The caller can request coupon information 1110, such as requesting coupons for a particular product, requesting transmission of a coupon package defined by the caller's agent and the like as described above.

The caller can order a catalogue, as described above 1112. The caller can order a product from a catalogue previously received 1114, e.g. using a process described below. The caller can request an update on a previous request made by the caller, such as by activating an agent to search the product database for items of interest 1116. The caller can modify the portfolio he has previously defined for his agent 1118. For example, if the agent's portfolio previously included searching for database programs, the caller can modify the agent's portfolio to be directed to spreadsheet programs. The caller can ask to be connected to an operator 1120 or ask for a direct connection to the seller (where available).

A number of items and services can be provided when a caller orders an item from a catalogue, using the interactive system. The system can check for the existence of coupons which apply the this item or which apply to related items and can inform or transmit the coupons to the caller, as described 1202 (Fig. 12). The system can check for the existence of a customer account number, and verify with the caller that the information (eg shipping address, credit card information) is still valid 1206. The system can determine if the product is being purchased as a gift 1208. In this case, the shipping information for the gift is obtained. The caller can be offered the opportunity to include a virtual gift card with the gift. 1212. A virtual gift card is an audio video or text message recorded by the gift-giver and stored for later playback. In one embodiment, the gift is packaged with instructions to the recipient regarding how to call up and receive the recorded voice message. Typically, the message will be recorded in a system similar to a voice-mail system and play back will be initiated by the recipient calling a telephone number and entering a playback code. Preferably the message will be retained on the system for a period of time after initial playback and thereafter erased to make room for other messages.

The shipping information and billing information is then used for processing the order. The order can be sent to a

shipping department or directly to the manufacturer for a drop-ship procedure. The manufacturer can be provided with packaging information including information regarding items to be included in the shipment, such as the coupons identified in step 1202, or the virtual gift card information from step 1212. Recorded message information other than virtual gift cards can also be included. For example, the manufacturer may specify that the product is to be accompanied by instructions telling the buyer how to access recorded messages (or an IVR system) to assist in such matters as product set-up, installation, unpacking, product registration, warranty registration, related product information or advertising and the like. The information provided to shipping can also be used to update inventory data 1220

The purchase of a product can be used to establish times for follow-up transmissions, such a call-back to the customer 1222, e.g. to offer extended service or warranty products, related products, coupons, updates, and the like.

After the user has made his purchase selection he is prompted to choose the next option. For example, if the buyer has not yet been assigned an agent number, he can be offered this option 1226. The buyer can get information on related products of catalogues 1228. The buyer can be returned to the main menu (Fig 11) to initiate another transaction 1230.

As depicted in Fig 13, if the user indicates a desire to establish a new agent, initial information regarding the name and address of the caller is obtained 1302. If desired, this information can be checked against the existing databases to determine if this call has already established at least one agent 1304. In some cases it may be desirable to limit the number of agents any one user can create. In these cases, the database is checked to see if this maximum number of agents has been exceeded 1306. If so, the caller is informed that he may either modify an existing agent, or exit the system 1308. If not, the caller is asked whether he wishes to modify an old agent (as described below) or create a new agent 1310. If a new agent is being created, information regarding the caller's shipping, billing and communications preferences is gathered

1312, either from existing database information relating to this caller (which the caller may verify at this time), or from caller input (e.g. using and IVR, input from a PC, connected via a modem, or by intervention of an operator). The system also gathers information regarding the portfolio which is desired for the new agent. This procedure is similar the that used for modifying an existing agent.

As depicted in Fig 14, when an existing agent is modified, there are a number of agent attributes which can be reviewed and/or modified. The types of attributes an agent may have depends largely on the purpose of the interactive system. For example, if the interactive system is configured to create personalized catalogues of the products of a single retail outlet, the attributes will relate only to the type of products carried by the retail outlet (in the case of a software seller, for example, type of application, price, features, type of computer used by the buyer, etc). On the other hand, if the interactive system is configured to create personalized catalogues of products from a number of diverse manufacturers, the agent might have a number of further attributes (e.g. preference for a particular manufacturer, category of product, such as software, computer systems, peripherals, or accessories).

To modify an existing agent, the agent identifier or number is obtained 1402 and the procedure loops through 1404, 1406 all attributes of the agent, playing-back the current attribute 1408, and prompting the user to confirm this attribute or to select a new choice for this attribute, e.g. from among a menu 1410.

Statistically valid inbound polling

In addition to using the interactive computing system for facilitating sales of goods and services, the interactive computer system, including the agent concept, can be used for the purpose of gathering information, such as public opinion polling.

Most statistically valid polling requires either outbound calls to people, outbound calls and personal visits or prearranged call-ins from previously qualified subjects. The present invention provides for inbound calls from the population at large, driven by any sort of public awareness or media campaign, to perform automated, real-time statistically correct polling or contest participation.

This system relies on the telephone and an interactive voice (IVR) unit connected to a database. According to one embodiment, software contains, based on census or other statistical information, a profile of the population of a given market, market segment, area or city or other division, so that the system knows the percentage of each age category income or other demographic category needed to establish a baseline for the desired poll or contest.

The system thus has a statistical base against which to compare information. The system can calculate the number of respondents in various demographic categories required to get a statistically valid sample on any given topic.

This embodiment can be implemented using an IVR database system similar to the system disclosed in SN 07/819,484 (Attorney docket no. ECCO-1-6164) and the Continuation-in-Part thereof,
SN 07/995,798 filed December 23, 1992, (Attorney docket no. ECCO-1-6424) which takes calls automatically and asks the consumer questions.

Questions are asked 1506 (Fig. 15) in such a manner that, as they are answered, a statistical profile is created in real-time of the consumer making the call 1508. If, for example, a caller was a 24 year old white male and had already gotten 50 calls from 24 year old white males the system could conclude that the current caller is not needed for a statistically valid sample 1510. In this case the caller can be handled courteously by the IVR, preferably without informing the caller that his responses will not be used, e.g. by asking a few brief questions and discarding the results 1512.

The system is able to take phone calls 1502 until it has gotten enough responses from people that it can identify a group of the calls as a statistically valid sample, 1520 judged by predetermined demographic factors, including but not limited to the profiles created through the responses, by percentage of certain groups identified by those calls, and in general by the information the caller provided before he or she answered questions. This can be accomplished e.g. using ANI (automatic number identification) to identify the source of the call by area code, and even further by neighborhood, using legal tools provided by the telephone systems (900 and 800 numbers, ANI and other number identification tools and services). 1504 Once the system determines that it has captured a statistically accurate representative sample of the opinion of the population at large, in the case of polling, it can be programmed to take further calls or cease taking calls 1522. It is possible that multiple versions of polls or different polls can be run (each until a statistically valid sample is gathered) for the same advertising campaign or promotion. In such cases, each poll can have its own agent which stores the demographic needs or interest of a particular poll on screens incoming calls for appropriate respondents.

The system is an inbound system rather than an outbound system for calling that can nevertheless generate statistically valid polling results and also operate in real time. It can "seize" lines of statistically valid subjects and turn them over to a live pollster, reporter or other source wishing to contact such a person 1518. The system is able to seize the call, play a message offering the opportunity or incentive to talk to the real person, and instruct the caller on how to facilitate the "direct connect" (call rerouting) to the real person.

In one embodiment, the software has the ability to select, at any given moment, a particular respondent on the phone line, based on their statistical profile or call number into the system. For example, if the system was looking for white males, 24 years old, the system can recognize if it has one on the line. It is able to do one of two things, (1)

automatically connect that call to a live operator or host 1518 or (2) ask permission of that host and/or ask permission of that caller to interrupt 1516 the interview process that is taking place in the IVR 1514 and ask that person if they would be willing to communicate with a live person. That person could be a pollster, it could be a newspaper reporter who is looking for this type of subject to do a story on, or it could be a game show host looking for a contestant. This same process could occur for allowing a television show or radio show or newspaper to select the type of respondents it wanted. The system can seize the proper telephone line and connect them to a live person or request their phone number so that they can be contacted for further interviewing.

In light of the above description, a number of advantages of the present invention can be seen. By creating an electronic "agent" which includes information about users' interests, preferences and/or characteristics, users are relieved of the burden of reviewing large amounts of irrelevant information. Buyers can receive advertisements which are more likely to be of interest and less likely to be viewed as "junk" mail. Sellers have reduced advertising costs since fewer advertisements are sent to un-targeted recipients and since recipients are more likely to review advertising which has a high content of relevant material.

Although the invention has been described by way of a preferred embodiment and certain variations and modifications, other variations, modifications and embodiments can also be used, the invention being defined by the following claims.

WHAT IS CLAIMED IS:

1. An interactive computer system comprising:

means for interfacing with input received from and output sent to a user of the system;

means for receiving information regarding characteristics of a user of the system and storing said information in digital form in a predetermined format;

means for storing information regarding each of a plurality of product descriptions in digital form in a predetermined format;

activatable means for comparing said information regarding characteristics of a user with said information regarding each of said plurality of product descriptions to identify a measure of correspondence therebetween;

activatable means for identifying a plurality of target products comprising those products whose descriptions have a measure of correspondence greater than at least some other of said plurality of product descriptions; and

means for automatically activating said means for comparing and said means for identifying upon the occurrence of at least a first predetermined event, in the absence of direct activation by said user of said system.

2. An interactive computer system as claimed in claim 1, further comprising:

means for compiling a catalogue describing at least said target products and transmitting said catalogue to said user of said system.

3. An interactive computer system as claimed in claim 1, wherein said user is a seller of a product and wherein said means for comparing includes means for comparing an advertising expiration date of at least one of said plurality of product descriptions with an identification of said user to identify correspondence between an imminent expiration date and a seller of said product, and further comprising

means for notifying said user of said imminent expiration date.

4. An interactive computer system as claimed in claim 1 wherein said means for comparing includes means for comparing said information regarding characteristics of a user with information regarding coupons related to said product descriptions and further comprising;

means for compiling information regarding a plurality of coupons related to said target products and transmitting said information regarding said plurality of coupons to said user of said system.

5. An interactive computer system comprising:

providing means for interfacing with input received from and output sent to a user of the system;

receiving information regarding demographic characteristics of a user of the system and storing said information in digital form in a predetermined format;

storing information regarding each of a plurality of desired demographic characteristics in digital form in a predetermined format;

comparing said information regarding demographic characteristics of a user with said information regarding each of said plurality of desired demographic characteristics to identify a measure of correspondence therebetween;

automatically connecting said user to a polltaker when said measure of correspondence is greater than a predetermined amount.

6. A method for generation and use of virtual documents, comprising:

recording and storing an audio or video message in a first storage medium residing in a communications system, said message being automatically accessible upon access to said system, in response to entry of a code;

transmitting information to an intended recipient of said message, said information including system access instructions and at least said code;

accessing said communications system in accordance with said instructions; and

initiating playback of said message in response to entry of said code.

7. A method, as claimed in claim 6, wherein said message comprises a gift message recorded by a gift purchaser.

8. A method, as claimed in claim 6. wherein said message comprises product information recorded by a product seller.

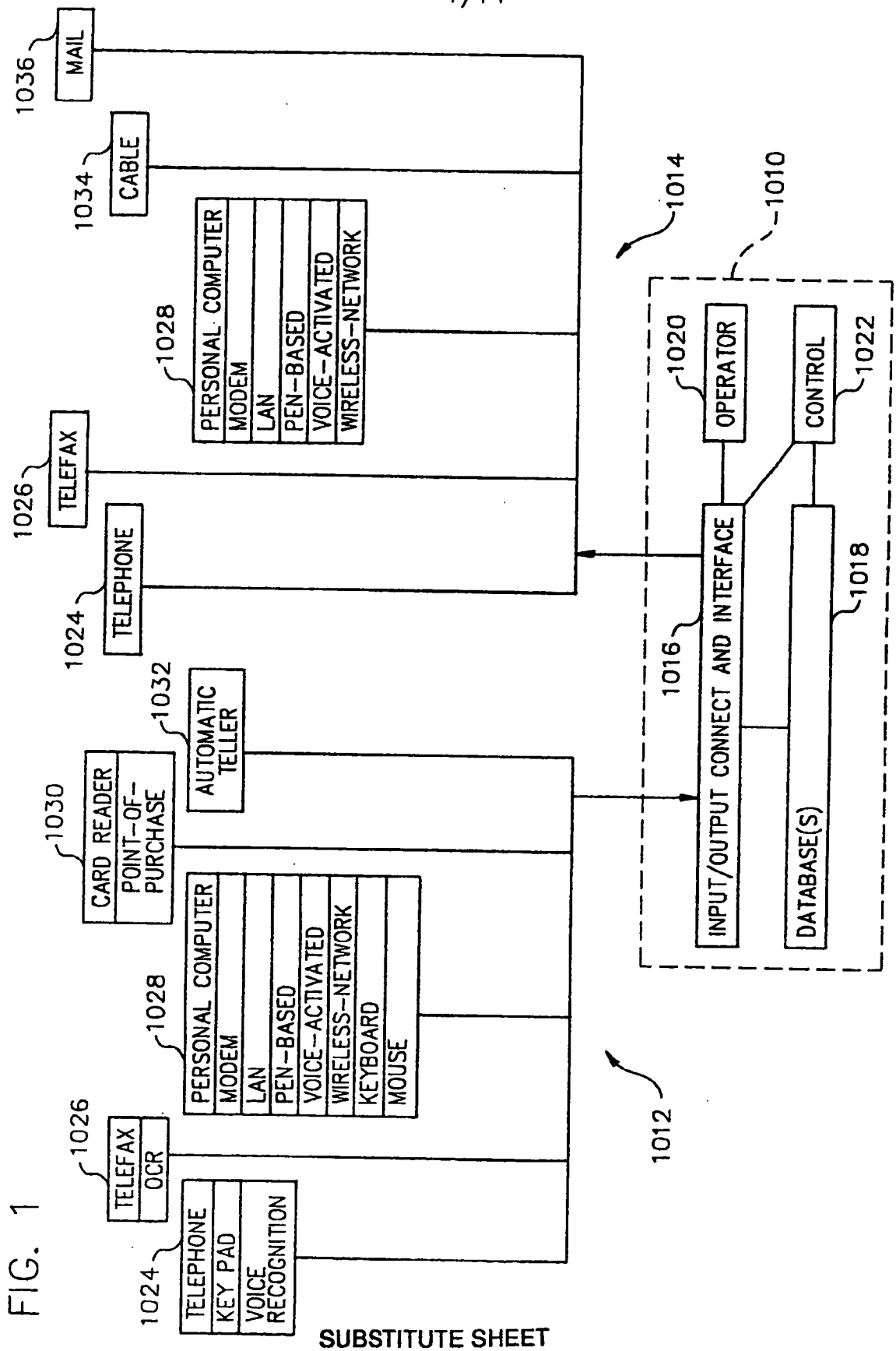

1036
MAIL
1034
CABLE
1028
PERSONAL COMPUTER
MODEM
LAN
PEN-BASED
VOICE-ACTIVATED
WIRELESS-NETWORK
1026
TELEFAX
1024
TELEPHONE
1014
1010
1020
OPERATOR
CONTROL
1022
1016
INPUT/OUTPUT CONNECT AND INTERFACE
1018
DATABASE(S)
1032
AUTOMATIC TELLER
1030
CARD READER
POINT-OF-PURCHASE
1028
PERSONAL COMPUTER
MODEM
LAN
PEN-BASED
VOICE-ACTIVATED
WIRELESS-NETWORK
KEYBOARD
MOUSE
1012
1026
TELEFAX
OCR
1024
TELEPHONE
KEY PAD
VOICE RECOGNITION

FIG. 1

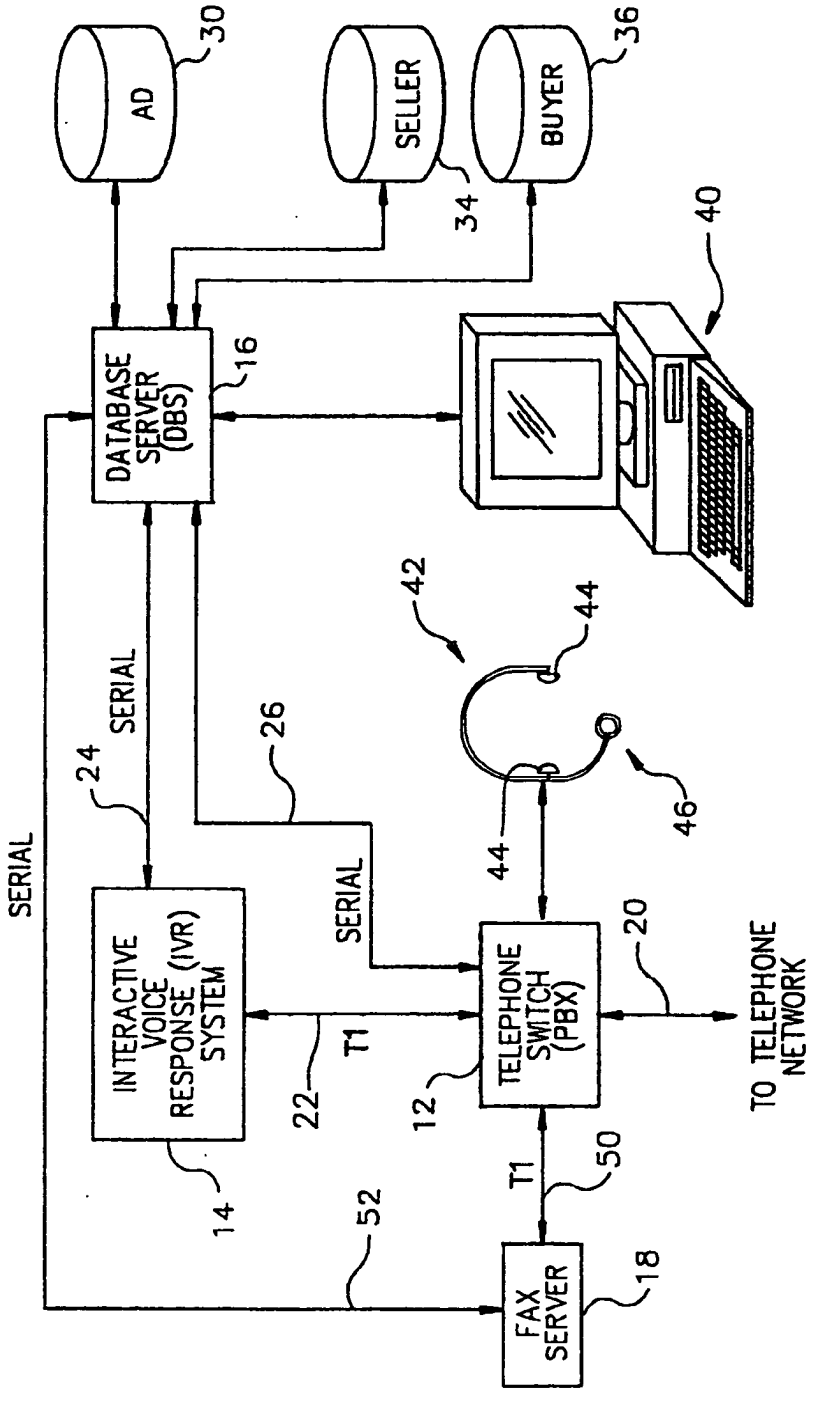

AD
30
SELLER
34
BUYER
36
40
DATABASE SERVER (DBS)
16
42
44
46
SERIAL
24
SERIAL
26
SERIAL
INTERACTIVE VOICE RESPONSE (IVR) SYSTEM
14
T1
22
TELEPHONE SWITCH (PBX)
12
20
TO TELEPHONE NETWORK
T1
50
52
FAX SERVER
18

FIG. 2

FIG. 3

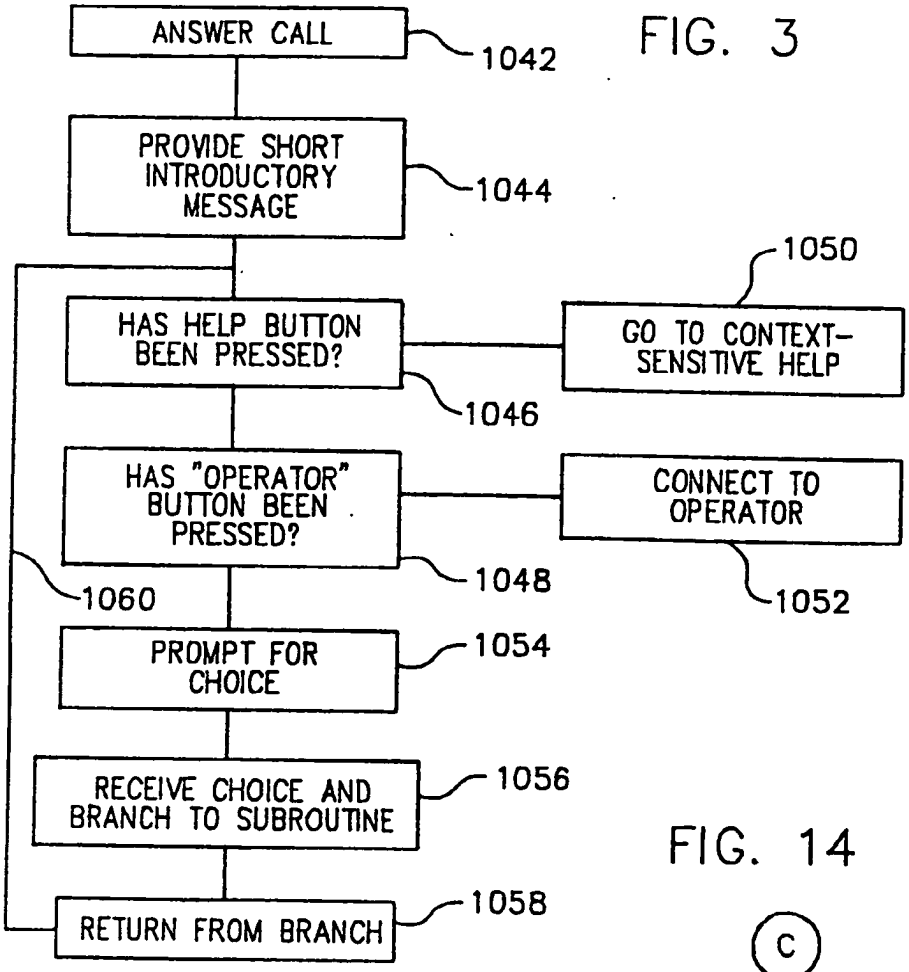

ANSWER CALL
1042
PROVIDE SHORT INTRODUCTORY MESSAGE
1044
1050
HAS HELP BUTTON BEEN PRESSED?
GO TO CONTEXT-SENSITIVE HELP
1046
HAS "OPERATOR" BUTTON BEEN PRESSED?
CONNECT TO OPERATOR
1048
1052
1060
PROMPT FOR CHOICE
1054
RECEIVE CHOICE AND BRANCH TO SUBROUTINE
1056
RETURN FROM BRANCH
1058

FIG. 14

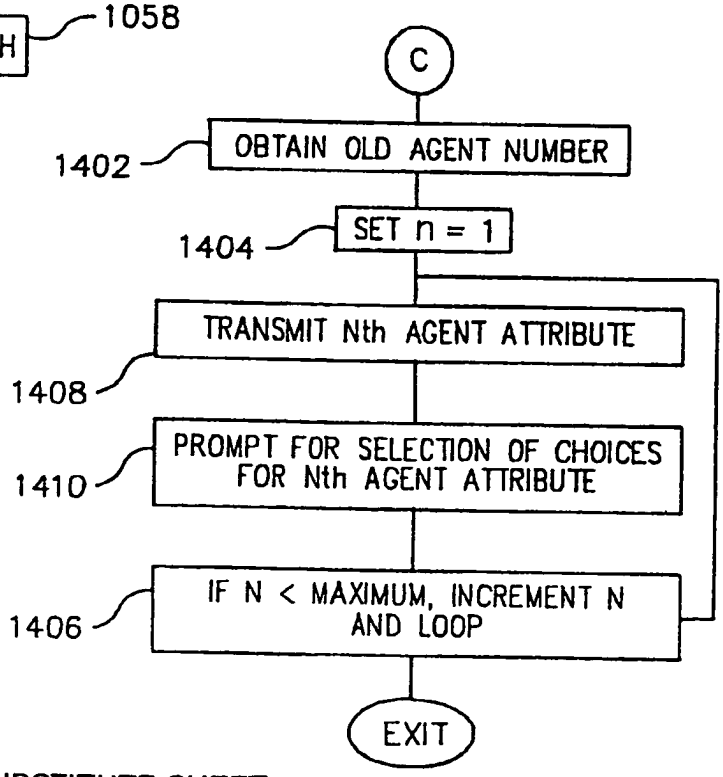

C
1402
OBTAIN OLD AGENT NUMBER
1404
SET n = 1
TRANSMIT Nth AGENT ATTRIBUTE
1408
1410
PROMPT FOR SELECTION OF CHOICES FOR Nth AGENT ATTRIBUTE
1406
IF N < MAXIMUM, INCREMENT N AND LOOP
EXIT

FIG. 4

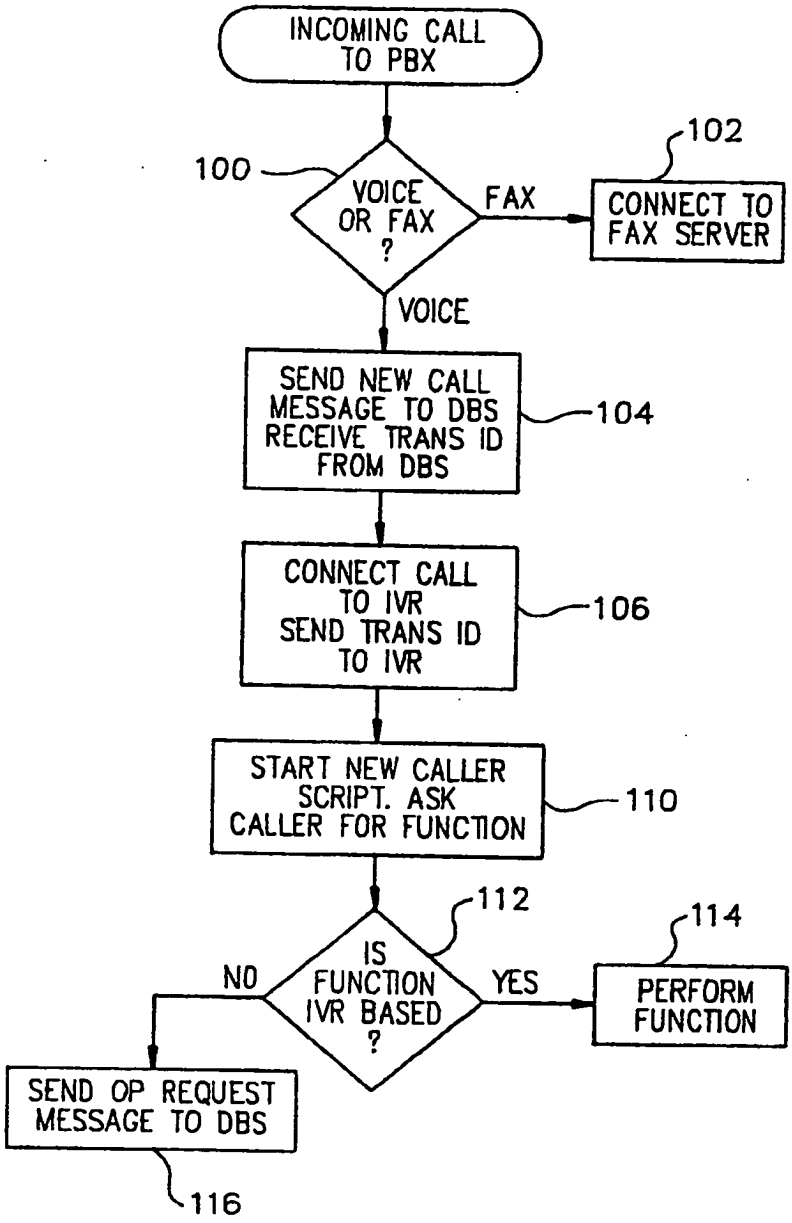

INCOMING CALL TO PBX
100
VOICE OR FAX ?
FAX
102
CONNECT TO FAX SERVER
VOICE
SEND NEW CALL MESSAGE TO DBS RECEIVE TRANS ID FROM DBS
104
CONNECT CALL TO IVR SEND TRANS ID TO IVR
106
START NEW CALLER SCRIPT. ASK CALLER FOR FUNCTION
110
112
IS FUNCTION IVR BASED ?
NO
YES
114
PERFORM FUNCTION
SEND OP REQUEST MESSAGE TO DBS
116

FIG. 5 5/14

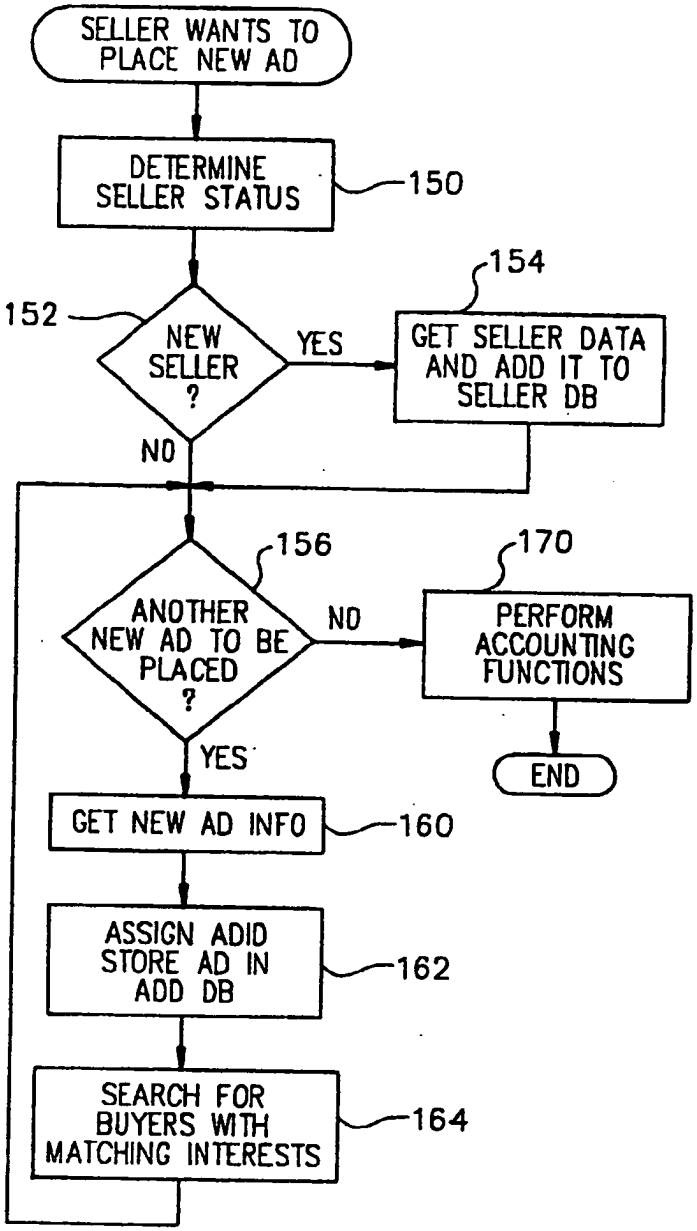

SELLER WANTS TO PLACE NEW AD
DETERMINE SELLER STATUS
150
152
NEW SELLER ?
YES
154
GET SELLER DATA AND ADD IT TO SELLER DB
NO
156
ANOTHER NEW AD TO BE PLACED ?
NO
170
PERFORM ACCOUNTING FUNCTIONS
END
YES
GET NEW AD INFO
160
ASSIGN ADID STORE AD IN ADD DB
162
SEARCH FOR BUYERS WITH MATCHING INTERESTS
164

FIG. 6

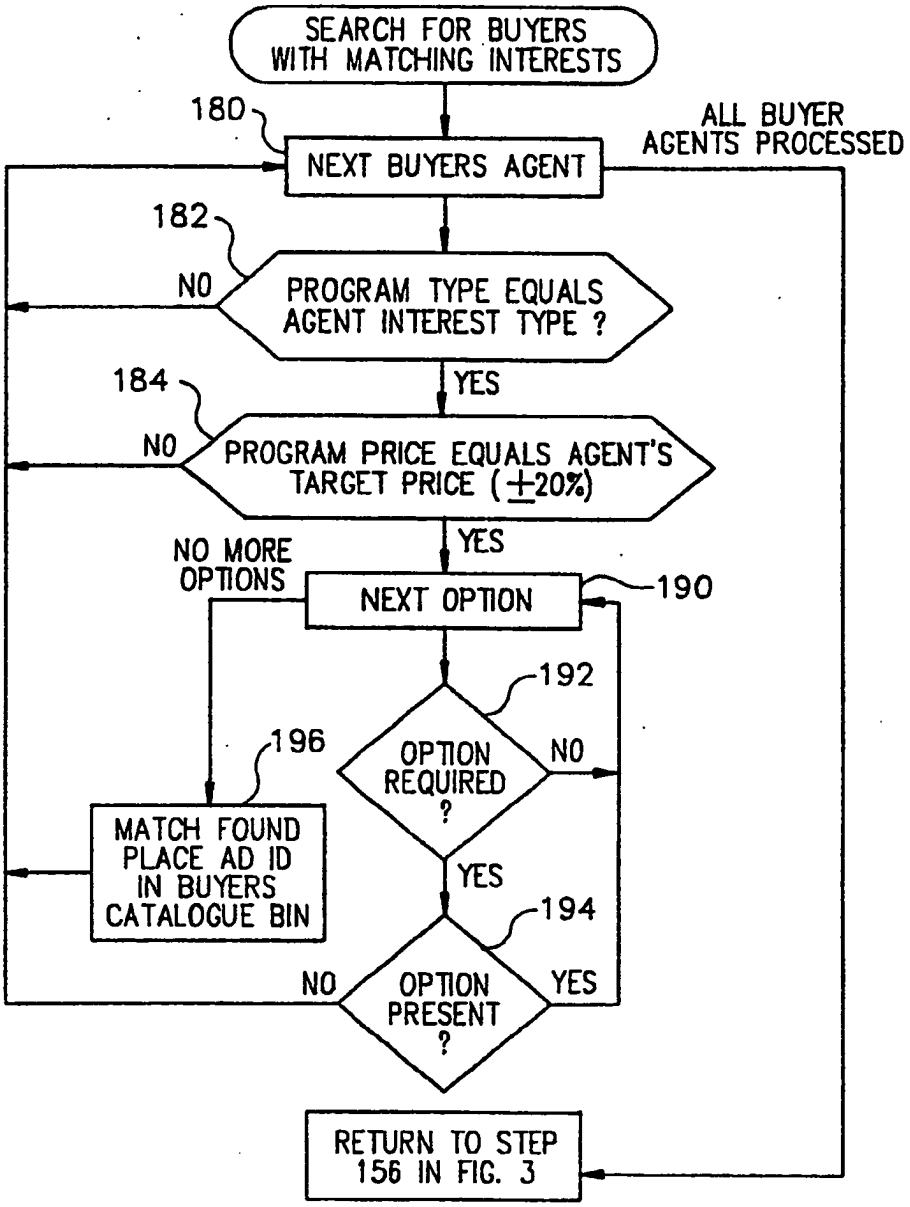

SEARCH FOR BUYERS WITH MATCHING INTERESTS
180
NEXT BUYERS AGENT
ALL BUYER AGENTS PROCESSED
182
NO
PROGRAM TYPE EQUALS AGENT INTEREST TYPE ?
YES
184
NO
PROGRAM PRICE EQUALS AGENT'S TARGET PRICE (±20%)
YES
NO MORE OPTIONS
NEXT OPTION
190
192
196
OPTION REQUIRED ?
NO
MATCH FOUND PLACE AD ID IN BUYERS CATALOGUE BIN
YES
194
NO
OPTION PRESENT ?
YES
RETURN TO STEP 156 IN FIG. 3

FIG. 7

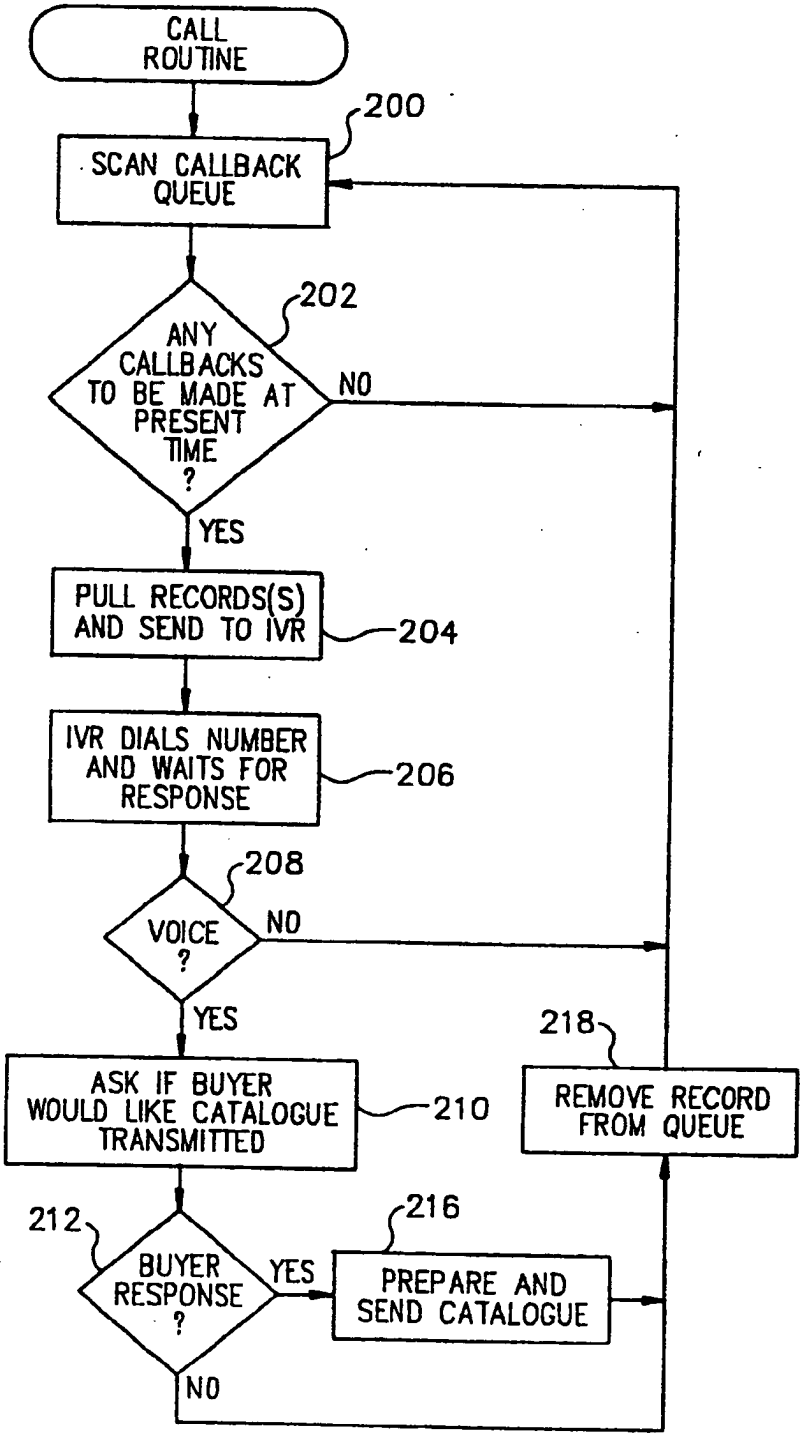

CALL ROUTINE
200
SCAN CALLBACK QUEUE
202
ANY CALLBACKS TO BE MADE AT PRESENT TIME ?
NO
YES
PULL RECORDS(S) AND SEND TO IVR
204
IVR DIALS NUMBER AND WAITS FOR RESPONSE
206
208
VOICE ?
NO
YES
218
ASK IF BUYER WOULD LIKE CATALOGUE TRANSMITTED
210
REMOVE RECORD FROM QUEUE
212
BUYER RESPONSE ?
YES
216
PREPARE AND SEND CATALOGUE
NO

FIG. 8

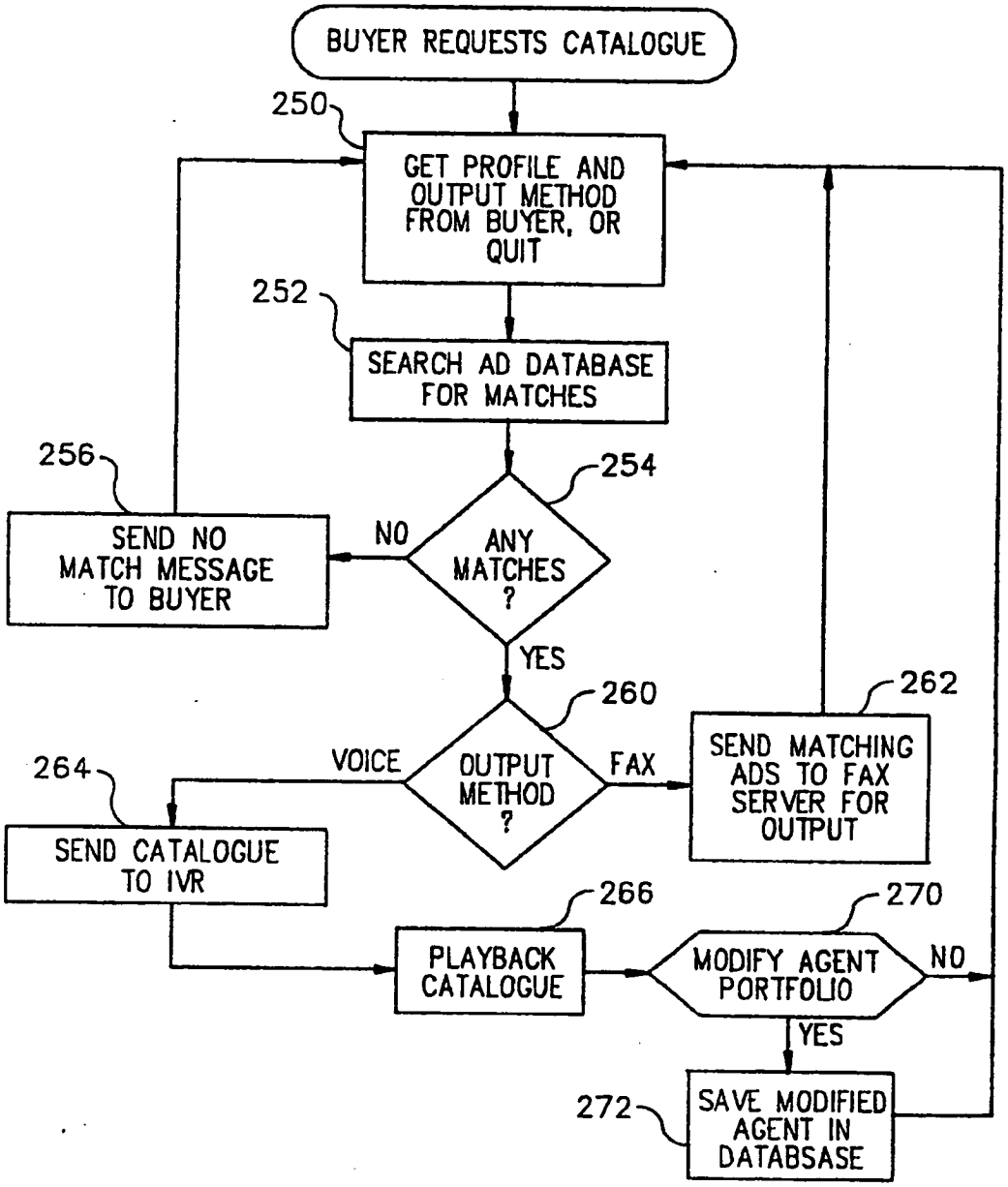

BUYER REQUESTS CATALOGUE
250
GET PROFILE AND OUTPUT METHOD FROM BUYER, OR QUIT
252
SEARCH AD DATABASE FOR MATCHES
254
ANY MATCHES ?
NO
256
SEND NO MATCH MESSAGE TO BUYER
YES
260
OUTPUT METHOD ?
VOICE
FAX
262
SEND MATCHING ADS TO FAX SERVER FOR OUTPUT
264
SEND CATALOGUE TO IVR
266
PLAYBACK CATALOGUE
270
MODIFY AGENT PORTFOLIO
NO
YES
272
SAVE MODIFIED AGENT IN DATABSASE

FIG. 9

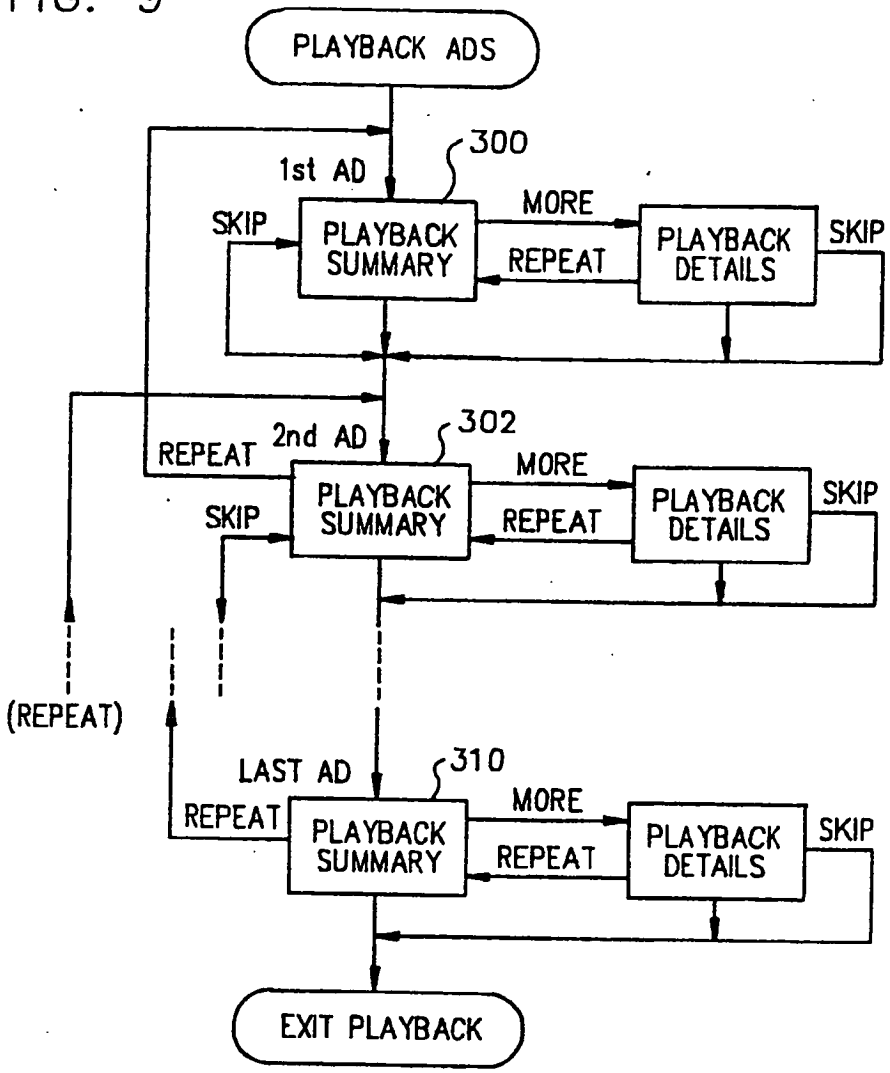
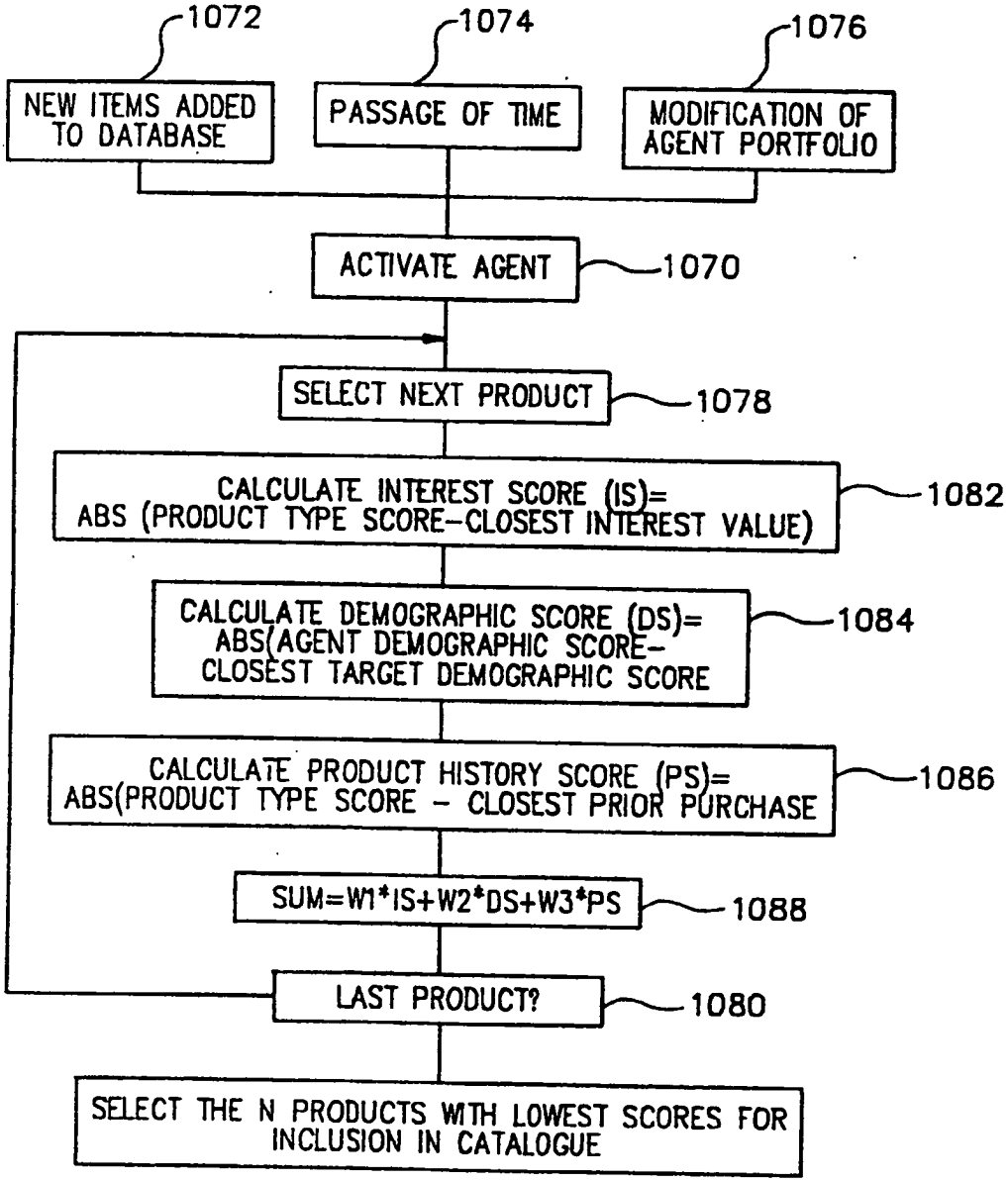

PLAYBACK ADS
1st AD
300
SKIP
PLAYBACK SUMMARY
MORE
REPEAT
PLAYBACK DETAILS
SKIP
REPEAT
2nd AD
302
PLAYBACK SUMMARY
MORE
REPEAT
PLAYBACK DETAILS
SKIP
SKIP
(REPEAT)
LAST AD
310
REPEAT
PLAYBACK SUMMARY
MORE
REPEAT
PLAYBACK DETAILS
SKIP
EXIT PLAYBACK

FIG. 10


1072
1074
1076
NEW ITEMS ADDED TO DATABASE
PASSAGE OF TIME
MODIFICATION OF AGENT PORTFOLIO
ACTIVATE AGENT
1070
SELECT NEXT PRODUCT
1078
CALCULATE INTEREST SCORE (IS)= ABS (PRODUCT TYPE SCORE-CLOSEST INTEREST VALUE)
1082
CALCULATE DEMOGRAPHIC SCORE (DS)= ABS(AGENT DEMOGRAPHIC SCORE- CLOSEST TARGET DEMOGRAPHIC SCORE
1084
CALCULATE PRODUCT HISTORY SCORE (PS)= ABS(PRODUCT TYPE SCORE - CLOSEST PRIOR PURCHASE
1086
SUM=W1*IS+W2*DS+W3*PS
1088
LAST PRODUCT?
1080
SELECT THE N PRODUCTS WITH LOWEST SCORES FOR INCLUSION IN CATALOGUE

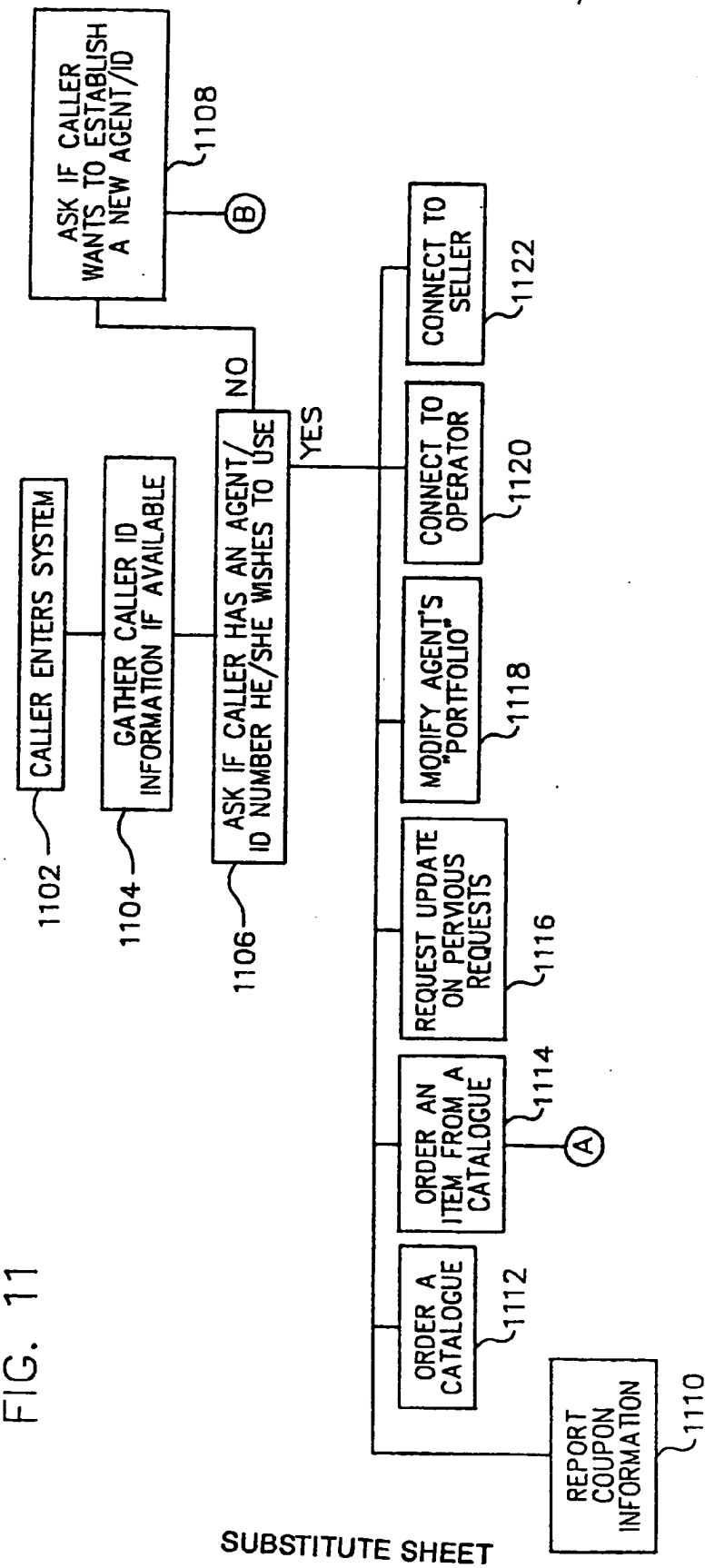
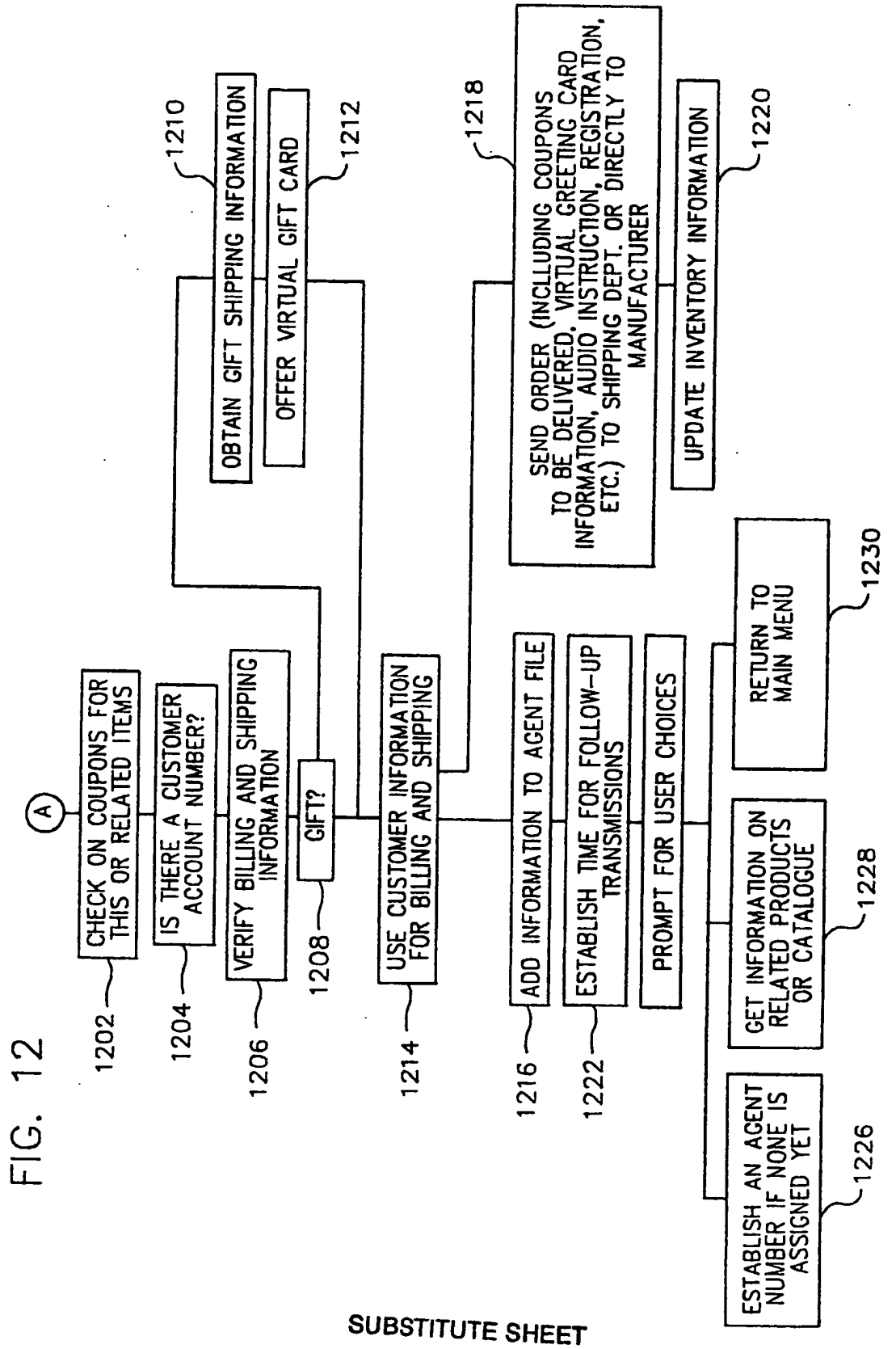

CALLER ENTERS SYSTEM
1102
GATHER CALLER ID INFORMATION IF AVAILABLE
1104
ASK IF CALLER HAS AN AGENT/ ID NUMBER HE/SHE WISHES TO USE
1106
NO
YES
ASK IF CALLER WANTS TO ESTABLISH A NEW AGENT/ID
1108
B
CONNECT TO OPERATOR
1120
CONNECT TO SELLER
1122
MODIFY AGENT'S "PORTFOLIO"
1118
REQUEST UPDATE ON PERVIOUS REQUESTS
1116
ORDER AN ITEM FROM A CATALOGUE
1114
A
ORDER A CATALOGUE
1112
REPORT COUPON INFORMATION
1110

FIG. 11

FIG. 12


A
CHECK ON COUPONS FOR THIS OR RELATED ITEMS
1202
IS THERE A CUSTOMER ACCOUNT NUMBER?
1204
VERIFY BILLING AND SHIPPING INFORMATION
1206
GIFT?
1208
OBTAIN GIFT SHIPPING INFORMATION
1210
OFFER VIRTUAL GIFT CARD
1212
USE CUSTOMER INFORMATION FOR BILLING AND SHIPPING
1214
ADD INFORMATION TO AGENT FILE
1216
SEND ORDER (INCLLUDING COUPONS TO BE DELIVERED, VIRTUAL GREETING CARD INFORMATION, AUDIO INSTRUCTION, REGISTRATION, ETC.) TO SHIPPING DEPT. OR DIRECTLY TO MANUFACTURER
1218
UPDATE INVENTORY INFORMATION
1220
ESTABLISH TIME FOR FOLLOW-UP TRANSMISSIONS
1222
PROMPT FOR USER CHOICES
RETURN TO MAIN MENU
1230
GET INFORMATION ON RELATED PRODUCTS OR CATALOGUE
1228
ESTABLISH AN AGENT NUMBER IF NONE IS ASSIGNED YET
1226

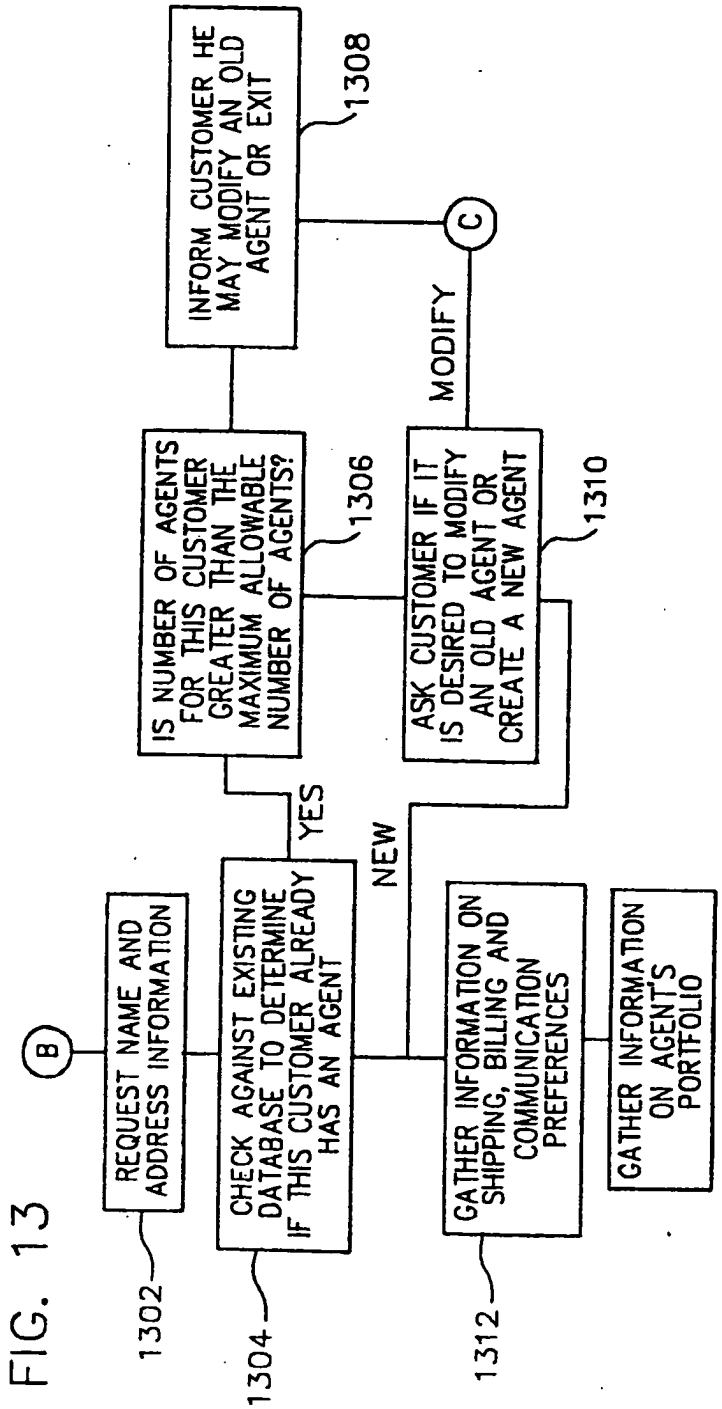
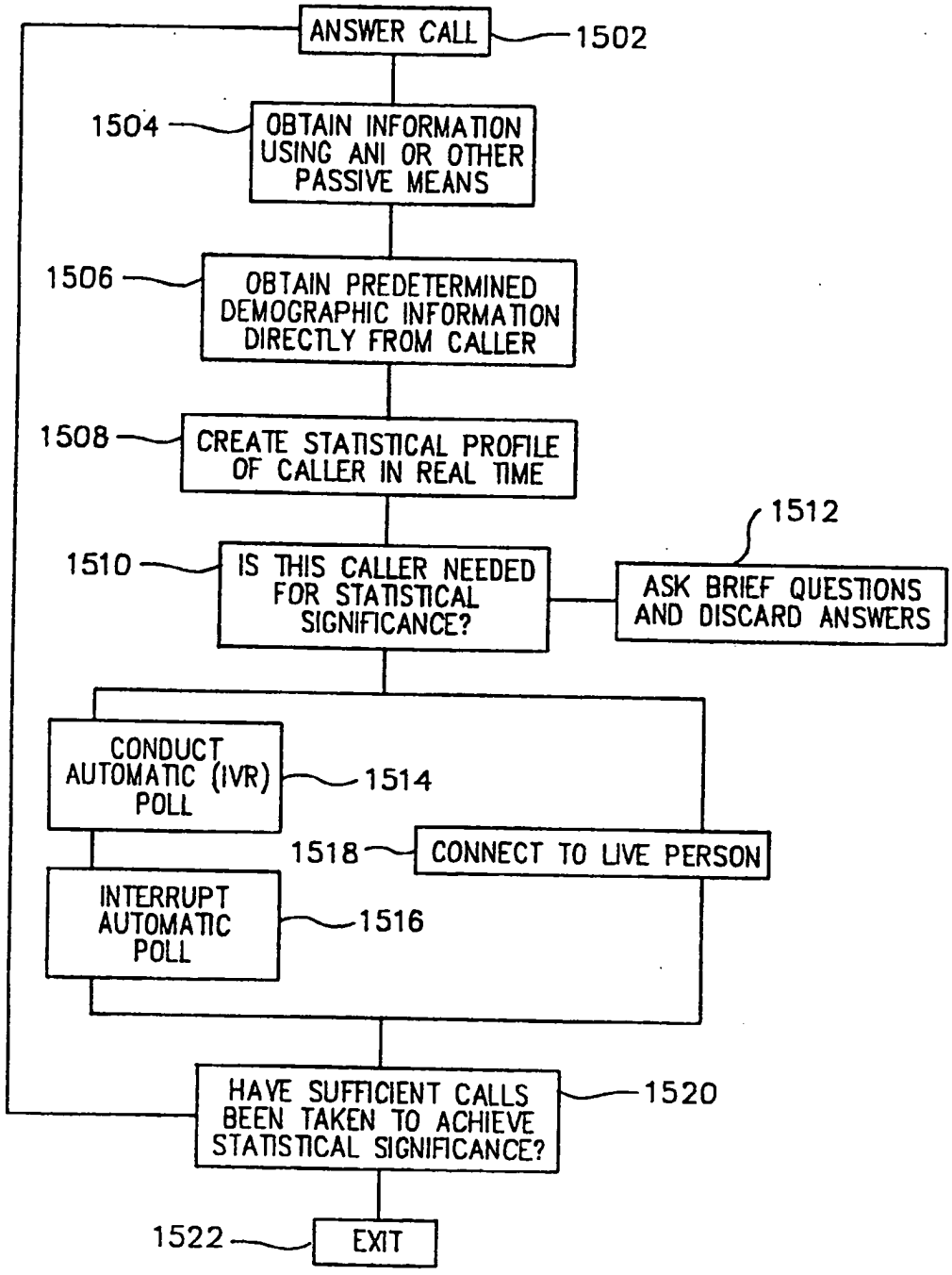

B
REQUEST NAME AND ADDRESS INFORMATION
1302
CHECK AGAINST EXISTING DATABASE TO DETERMINE IF THIS CUSTOMER ALREADY HAS AN AGENT
1304
YES
IS NUMBER OF AGENTS FOR THIS CUSTOMER GREATER THAN THE MAXIMUM ALLOWABLE NUMBER OF AGENTS?
1306
INFORM CUSTOMER HE MAY MODIFY AN OLD AGENT OR EXIT
1308
C
MODIFY
ASK CUSTOMER IF IT IS DESIRED TO MODIFY AN OLD AGENT OR CREATE A NEW AGENT
1310
NEW
GATHER INFORMATION ON SHIPPING, BILLING AND COMMUNICATION PREFERENCES
1312
GATHER INFORMATION ON AGENT'S PORTFOLIO

FIG. 13

FIG. 15


ANSWER CALL
1502
1504
OBTAIN INFORMATION USING ANI OR OTHER PASSIVE MEANS
1506
OBTAIN PREDETERMINED DEMOGRAPHIC INFORMATION DIRECTLY FROM CALLER
1508
CREATE STATISTICAL PROFILE OF CALLER IN REAL TIME
1512
1510
IS THIS CALLER NEEDED FOR STATISTICAL SIGNIFICANCE?
ASK BRIEF QUESTIONS AND DISCARD ANSWERS
CONDUCT AUTOMATIC (IVR) POLL
1514
1518
CONNECT TO LIVE PERSON
INTERRUPT AUTOMATIC POLL
1516
HAVE SUFFICIENT CALLS BEEN TAKEN TO ACHIEVE STATISTICAL SIGNIFICANCE?
1520
1522
EXIT

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/05290

A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :G06F 15/22,15/24; G06G 7/52; H04M 1/64
US CL :364/401; 379/88

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 364/400, 401; 379/88, 67, 74, 76, 77

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 3,804,993 (Honnold et al.) 16 APR 1974 see Abstract	6-8
Y	US, A, 3,819,173 (Anderson et al.) 25 JUN 1974 see col. 3, lines 42-48	3
Y	US, A, 4,736,405 (Akiyama) 5 APR 1988 see col. 1, 25-31	6-8
X,Y	US, A, 4,747,126 (Hood et al.) 24 MAY 1988 see col. 7, lines 3-30; col. 8, lines 11-25	6-8

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be part of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 22 July 1993	Date of mailing of the international search report 21 SEP 1993
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. NOT APPLICABLE	Authorized officer DONALD E. MCELHENY, JR. Telephone No. (703) 3005-3800

Form PCT/ISA/210 (second sheet)(July 1992)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/05290

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 4,775,935 (Yourick) 4 OCT 1988 see col. 12, lines 14-23	1-4
Y	US, A, 4,882,675 (Nichtberger et al.) 21 NOV 1989 see col. 3, lines 36-40	4
X,Y	US, A, 5,099,422 (Foresman et al.) 24 MAR 1992 see col. 6, line 54 to col. 7, line 10; col. 7, lines 15-65; col. 2, lines 66-68; col. 2, lines 3-6	1-4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/~~US93~~/05290 4593

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
(Telephone Practice)
Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-4

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

B. FIELDS SEARCHED
Electronic data bases consulted (Name of data base and where practicable terms used):

APS
SEARCH TERMS: notify, renewal, expir?, advertis?, coupon#, catalog##, characteristic#, personal information, customer information, target product#, match?, message, audio, video, code, instruction#, playback, gift, product#

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING
This ISA found multiple inventions as follows:

I. Claims 1-4, drawn to an interactive computer system which compares user characteristics with product descriptions to determine target products.
II. Claim 5, drawn to an interactive computer system which automatically connects a user with desired demographic characteristics to a polltaker.
III. Claims 6-8, drawn to an interactive computer system which stores an audio and/or video message, transmits access instructions and a code to a recipient, accesses a communications system, and initiates playback.

The claims of these three groups are directed to different inventions which are not so linked as to form a single general inventive concept. The inventions are not linked in operation and perform completely different operations. Note, PCT Rule 13.2 and 37 CFR § 1.475.